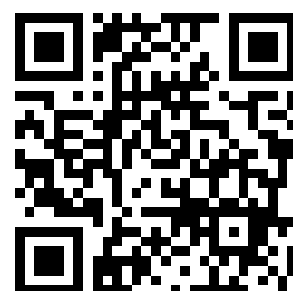


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# Garage Efficiency

No. 3 inserted in number

775807

VOL. VII

CHICAGO, JULY, 1916

TORA No. 1

## The Interest of the Automobile Owner and the National Automobile Trade Association

The unquestioned integrity of a merchandising enterprise is the dominant factor in securing, maintaining and insuring the patronage of the public.

It is upon the reputed accurate business judgment of the merchant, the get-at-able-ness of his stock in trade always of a quality commensurate with the prices asked, and his recognized intent to render satisfying service, that develops and maintains public confidence.

It is the thoroughly business-like and fair relations between buyer and seller that develops that very tangible asset, "good will," upon which the structure of the enterprise must be founded.

While the stated purpose of the National Automobile Trade Association is to promote and safeguard the interests of the Automobile Dealer, Garage Owner, and the Automobile Supply and Accessory Store, its activities re-

flect with favor upon the interest and welfare of the Automobile Owner.

Its influence is being brought to bear upon the perplexing retail trade problems of this young industry in a manner to develop and maintain public confidence; to encourage and insure the patronage of the legitimate dealer in automobiles, motoring necessities and labor, and in every consistent manner, to nourish that essential factor in business success, "good will."

It is the pledged policy of the National Automobile Trade Association to approach these trade problems in an honest spirit of co-operation with manufacturer, jobber, dealer and consumer, to the end that the interests of all, which indeed are common interests, shall be conserved.

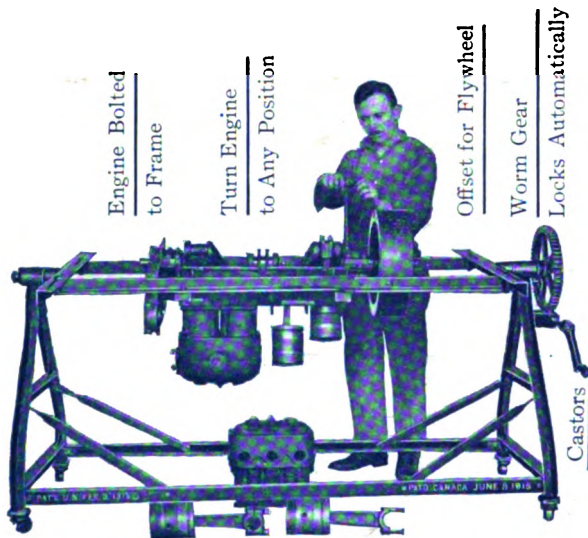
The N. A. T. A. seeks to insure to the car owner, Standardized Service by competent workmen for reasonable compensation and to encourage the sale of motoring accessories of standard quality at reasonable prices, thus assuring to the motorist satisfactory service and providing a fair profit to the retail trade.

In the interest of good business, its policies are opposed to ruinous "something for nothing" practices that disorganize business and destroy public confidence.

**J. C. THORPE, General Director,**  
**National Automobile Trade Association, Chicago, Illinois**



# The New Dolder



The New Dolder is especially designed for Ford motors and all motors with wider flywheel than crank case support. Will hold motors up to 1,000 lbs. allowing them to be tested on the New Dolder yet can be easily moved about by one man.

We very much wish to impress upon your mind, this fact: The New Dolder Auto Engine Stand, will save you 50 per cent of the time you are forced to consume in overhauling a motor, what does this mean to you?

How much would this increase your service? Do you think increased efficiency means more business for you? If it does will it not increase your profits? Can you, not afford to expend, so small a portion, of your profits, to install a

## NEW DOLDER

### GENERAL DIMENSIONS

Length over all, 7 feet  
Width at base, 2 feet 6 inches.  
Length engine space, 5 feet 6 inches.  
Width engine space, 2 feet 8 inches.  
Height to top of frame, 3 feet.

Shipped knocked down.  
Shipping weight, 250 lbs.

Net Price, \$31.50, f.o.b. Earlville

**Dolder Manufacturing Co.**

Sole Distributors  
EARLVILLE, ILL.

# Pondelick Bros.

Will Pay

# \$100

if they fail to duplicate any part of any make of automobile or truck, foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in one to three days' notice. All welding is done

at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelicks. They increase the durability of many parts — even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting anti-leak piston rings, new wrist pin, hardened and ground, bushing, made of genuine bronze, including fitting and assembling of connecting rod to piston for **\$15.00.**

**Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.**

General Factory, 5100 to 5112 West 16th St.  
Main Office, Leavitt St. and Jackson Blvd.

**Pondelick Bros., Chicago, Ill.**



VOL. VII. JULY, 1916. NO. 1.

# GARAGE EFFICIENCY

THE NATIONAL GARAGE MONTHLY

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## The Motor is as Efficient as its Piston Rings--No More

It may have been built after the latest and most approved designs. The greatest care and most skillful mechanics may have been employed. The costliest materials may have been used. But if it is equipped with common, leaking Piston Rings you can safely discount its performance, its life and its possible minimum up-keep at least 25 per cent.

There's not an American make of automobile of any note but what has been equipped with

## Burd High Compression Piston Rings

either as Standard Factory parts, in service station replacements or in private repair. And every car so equipped is a better, more economical car because of its Burd Rings. Properly installed, Burd Rings are warranted to produce higher compression and more power with less fuel and oil than any other piston ring made. That's not a claim, mind you, but an absolute warranty legally obligating us to return your money if the rings fail to make good. We know of no other piston ring manufacturer willing to back his product to the same extent. Ask us for the evidence.

### Burd High Compression Ring Co. Rockford, Illinois

Boston, Mass.  
Buffalo, N. Y.  
Chicago, Ill.  
Dallas, Texas  
Detroit, Mich.  
Kansas City, Mo.  
Los Angeles, Cal.  
Milwaukee, Wis.  
Minneapolis, Minn.

899 Boylston St.  
810 Iroquois Bldg.  
1427 So. Michigan Ave.  
819 Wilson Bldg.  
578 Woodward Ave.  
216 Rialto Bldg.  
316-317 Hass Bldg.  
813 Grand Ave.  
904 Marquette Ave.

New York City  
Peoria, Ill.  
Philadelphia, Pa.  
Pittsburgh, Pa.  
Portland, Oregon  
Rochester, N. Y.  
St. Paul, Minn.  
San Francisco, Cal.  
Seattle, Wash.

1864 Broadway  
223 Masonic Temple  
684 N. Broad St.  
904 East End Trust Bldg.  
816-817 Lewis Bldg.  
558 Lyell Ave.  
147 W. Sixth St.  
841 Phelan Bldg.  
705 E. Pike St.



# WANTED— Garage Bookkeepers

Must be competent to install and operate a complete Departmentized Garage Cost Accounting System. To young men and women so equipped a FIRST-CLASS POSITION IS ASSURED by a Keen and Rapidly Growing Demand.

## A MODERN GIANT

The retail automobile business has leaped in a few years from a tiny beginning to gigantic proportions. It has OUTGROWN OLD METHODS. It must be SYSTEMATIZED!

## This is an Age of Specialists

You don't have to spend two or three years studying Higher Accountancy to be a Garage Cost Accountant. But you DO have to know the *principles* of Cost Accounting as adapted to the *special needs* of that highly specialized institution, the modern Garage.

## The Ten Weeks Correspondence Course of the Hollister School of Garage Accounting

Gives you a thorough training for this highly remunerative work in your spare hours at home. This school is under the personal direction of HORACE EDWARD HOLLISTER, the well-known Garage Cost Specialist, Author of PRACTICAL GARAGE ACCOUNTING and Editor of the Accounting Department of GARAGE EFFICIENCY. It is the only school in the United States specializing in Garage Accounting, and MR. HOLLISTER is the best qualified man in the country to train you for this work. He knows exactly what you need to know and just what is unnecessary; hence you waste no time on side issues, but every hour counts. His prestige and reputation behind you will be a powerful assistance to you in securing a paying position, and the special unlimited free consultation privilege will insure your making good.

SEIZE THIS GOLDEN OPPORTUNITY to enter a virgin field of wonderful promise. STUDY UNDER HOLLISTER.

**WRITE TODAY FOR CATALOGUE**

**The Hollister School of Garage Accounting**  
**110 North Main Street - - - ROCKFORD, ILLINOIS**

# Directory of Garage and Motor Trade Organizations

## THE NATIONAL AND ITS AFFILIATIONS.

**National Automobile Trade Association**—President, Robert Bland, Evanston, Ill.; treasurer, F. A. Bean, Detroit, Mich.; secretary, R. A. Wilson, 208 S. La Salle St., Chicago, Ill. Directors—Jacob Friedman, Dyersburg, Ia.; E. T. Jones, Akron, O.; L. C. Steers, Detroit, Mich.; W. B. Taylor, Rockford, Ill.; K. R. Vaught, Indianapolis, Ind.

### MICHIGAN.

**Michigan Automobile Trade Association**—President, L. F. Bertrou, Big Rapids, Mich.; vice-president, L. C. Rivers, 147 W. Main St., Battle Creek, Mich.; treasurer, C. F. Strong, Coldwater, Mich.; secretary, L. C. Steers, 518 Grand River Ave., Detroit, Mich.

**Battle Creek Garage Owners' Association**—President, Frank Palmer, Battle Creek, Mich.; vice-president, H. Phillips, Battle Creek, Mich.; secretary, H. E. Petrie, 99 W. Main St., Battle Creek, Mich.; treasurer, Geo. Williams, Battle Creek, Mich.

**Kalamazoo Automobile Trade Association**—President, E. P. Sumption, Kalamazoo, Mich.; vice-president, Harry Scott, Kalamazoo, Mich.; secretary, W. H. Woodson, 1328 Portage St., Kalamazoo, Mich.; treasurer, H. L. Triestram, Kalamazoo, Mich.

### OHIO.

**Ohio Automobile Trade Association**—President, F. T. Price, Chamber of Commerce Bldg., Columbus, O.; vice-president, E. T. Jones, Akron, O.; secretary-treasurer, A. J. Peebles, Columbus, O.

**American Highway Association, Colorado Bldg., Washington, D. C.**—President, F. Harrison; vice president, L. W. Page; secretary, I. S. Pennypacker; treasurer, John Burke.

**Lehigh Valley Automobile Trade Association**—President, Geo. W. Hunsicker; vice-president, A. J. Meyers; secretary, E. T. Satchell, Allentown, Pa.; treasurer, Walter Wink.

**Crawford County Automobile Trades Association**—President, H. A. Paxton; vice-president, E. T. Rayl; secretary-treasurer, E. R. Lewis, Bucyrus, O.

**Columbus Garage Owners' Association**—President, F. T. Price, Chamber of Commerce Bldg., Columbus, O.; secretary, J. L. Steele, 248 N. 4th St., Columbus, O.

### ILLINOIS.

**Chicago Garage Owners' Association**—President, H. E. Halbert, 606 Independence Blvd., Chicago, Ill.; vice president, R. C. McPherson, 4551 Kenmore Ave., Chicago, Ill.; treasurer, B. F. Campbell, 1146 E. 47th St., Chicago, Ill.; secretary, Harry Salvat, 740 E. 51st St., Chicago, Ill.

**Tri-City Automobile Trade Association**—President, G. F. Burmeister, Davenport, Ia.; vice president, E. G. Donn, Rock Island, Ill.; secretary, R. E. Beedee, Davenport, Ia.

**Chicago Garage Owners' Association**—President, H. E. Halbert, 606 Independence Blvd., Chicago, Ill.; vice-president, Harry Salvat, 740 E. 51st St., Chicago, Ill.; treasurer, B. F. Campbell, Chicago, Ill.

**Automobile Trade Association of Champaign County**—President, Geo. G. Goll, Champaign, Ill.; vice president, Guy Duell, Tolono, Ill.; secretary-treasurer, H. A. Amerman, Urbana, Ill.

### IOWA.

**Iowa Retail Auto Dealers' Association**—President, J. Friedman, Dyersville, Ia.; vice-president, D. O. Babcock, Gowrie, Ia.; secretary-treasurer, S. L. Seeman, 710 Youngerman Bldg., Des Moines, Ia.

### CALIFORNIA.

**Garage Owners' Protective Association of San Francisco**—President, J. B. Kelly, 1155 Van Ness Ave., San Francisco, Cal.; vice president, C. W. Eichbaum, 2084 Market St., San Francisco, Cal.; secretary-treasurer, A. D'Etzel, 593 Turk St., San Francisco, Cal.

### OTHER ORGANIZATIONS.

**Electric Vehicle Association of America**, 1000 Chestnut St., Philadelphia, Pa.—President, W. H. Johnson; vice-president, E. S. Mansfield; treasurer, H. M. Edwards; secretary, A. Jackson Marshall.

**Garage & Repairmen's Association of California, Inc.**—Secretary, D. P. Oatman, 666 Walker Auditorium Bldg., Los Angeles, Cal.

**Iowa Automobile Business Association**—President, J. C. Bernhard, 506 7th St., Des Moines, Ia.; vice president, H. C. Carr, 413 12th St., Des Moines, Ia.; secretary, N. T. Miller, 409 Observatory Bldg., Des Moines, Ia.; treasurer, A. R. Rockwell, 108 10th St., Des Moines, Ia.

**United Garage Associations of New York State, Inc.**—President, Wm. Haradon, New York City; vice-president, Jno. Van Ben-schoten, Poughkeepsie, N. Y.; treasurer, Edward W. Leahy, Albany, N. Y.; secretary, Geo. F. Kaiser, 52 Broadway, New York.

**Washington Motor Trades Association**, 205 White Bldg., Seattle, Wash.—President, W. S. Fearnie; vice-president, Newton Foster; secretary-treasurer, J. W. Johnson.

**Oregon State Dealers, Garage & Repairmen's Association**—Secretary, W. F. McKenney, 55 First St., Portland, Ore.

**Clinton Automobile Dealers' Association**—President, A. A. Daehler; vice-president, G. P. Lamberton; secretary-treasurer, O. T. Roberts, Clinton, Iowa.

## How the Texas Tube test happened!

IT nettled Bill Parr considerably! So many Motorists had carelessly stated that "all Tire Tubes are just Rubber." He determined to show some folks the difference, in a way they would never forget. There were four Cars at the door, and their Owners or Drivers at his elbow. To these he said,—  
"Boys,—how strong do you think this Goodrich Brown Tube actually is?"  
"Do you believe it is strong enough to tow Mr. Oden's five passenger Car, with four people in it, for 20 blocks?"  
"You don't, eh!"  
"Well now here's a bit of a Bet I want to make with any or all of you."  
"I will bet you a Dinner that this little old regular Goodrich Tube (34x4) will not only tow Mr. Oden's Car, but will tow all three of your Cars,—fully passengered,—through the streets, for the full 21 blocks (more than a mile and a half)—starting and stopping as many times as the crowd makes it necessary."  
"I will,—if you Gentlemen are agreeable,—line up all four of yours Cars, right here and now, take three regular Goodrich Tubes hap-hazard out of their boxes,—tie one tube between each two Cars, (which means hauling three Cars on the first Tube) and tote You-all that way to 'The Corners.'"  
"Are you willing to bet a Dinner that any one of the three Tubes will 'go broke' on the way, or show a flaw which would leak Air, or prevent its being used for its original Tire purpose afterwards?"

"You are, eh?"  
"Well,—the Bet's on!"  
"Come along, and you be the Judges."

**GOODRICH** "Texas—  
—Test"  
**INNER-TUBES TIRES**

THE Dinner was a very Cheerful Affair. As Oden said afterwards (when putting up his share of the Bet) "you could have bet me a Million on that, Parr, and I'd have taken you up,—even if I had to borrow the Million."  
"I don't see how the blamed Tubes ever did hold out,—especially going up Saco St. under such a strain."  
"With eight people in the last three Cars,—and a total load of over 8,800 pounds I sure thought to hear something awfully bad before the Second Block."  
"Whaddye put into that brown Goodrich Rubber anyway; how to make it hang together like that?"  
Fritz said that what puzzled him most was the brown Rubber Tubes "not being all stretched out of shape after such a tug, even if they did hang together at the finish."  
"Look you," said he, "when we released the load,—after the Haul,—they instantly snapped back into just three-quarters of an inch longer than they were at the start!"  
"And that ¾ of an inch, they took up again in less than two hours rest."

"WELL, boys,"—Bill Parr remarked,—as he smoothed out a wrinkle in his well-filled vest, "that'll stop the Argument about all Tire Tubes being 'just Rubber,' won't it?"

"If the Brown Stuff that toted all you Heavy-weights,—and your Cars,—for 21 blocks, without a Sign of Heavy Duty afterwards, isn't something MORE than 'Just Rubber,' like other Tubes,—then you'd better buy the 'Just Rubber' kind hereafter."

"I'm going to ask all of you to sign your names to this 'Texas Tire Tube Test,'—just to show that you have taken part in a regular Exploit which is mighty well worth recording."

So indeed they did,—and here is the affidavit:

**AFFIDAVIT**  
This certifies that we, the undersigned, took part in and witnessed the Texas tube test referred to in the advertisement entitled "How the Texas Tube Test Happened!"—that the test was made on date of Nov. 11, at Waco, Texas, the distance covered being twenty-one blocks, and that the result was as described.  
Signed—  
B. A. FRITZ, W. A. PARR,  
B. A. FRITZ, W. A. PARR,  
Subscribed and sworn to before me by W. A. PARR, J. M. Nash, B. A. Fritz and W. A. Parr, this 3rd day of Nov. A. D. 1916, at Waco, Texas.  
Signed—J. G. WREN, Notary Public, McLennan County, Texas.

Now what think You of these GOODRICH Tire Tubes that could bear up under such a gruelling test?  
Reflect that they cost you no more than the "ordinary" Tubes you so carelessly accept!



## The Secret of "Small Up-keep" is Perfect Lubrication

The first cost of an automobile is important, but what does it cost you to run it? That's more important.

Is your car laid up frequently — scored cylinders — burned out bearings — smoky spark plugs?

**Use Polarine**  
FRICTION REDUCING MOTOR OIL

A perfect lubricant that covers even the remotest friction surface, protecting every wearing part and reducing friction to the minimum. Friction minimized means repairs minimized and increased power as well.

Polarine flows freely at zero and maintains the correct lubricating body at any motor speed or temperature.

Order a half barrel today. It's cheaper that way than in smaller quantities.

Standard Oil Company (Indiana) Chicago, U. S. A.

Use Red Crown Gasoline and get more power, more speed, more miles per gallon

14a

# The Exponent of Co-operation

Published by  
**THE GARAGE PRESS**  
Suite 1634

Transportation Building  
608 South Dearborn St.

**WESLEY T. CHRISTINE**  
Editor and Manager



**OFFICIAL SPOKESMAN  
FOR**

**The National Automobile  
Trade Association and or-  
ganizations affiliated with  
it.**

Volume VII.

CHICAGO, JULY, 1916.

Number 1.

Devoted to the Interests of  
**CAR DEALERS  
GARAGE OWNERS  
GARAGE OWNERS' ASSOCIATIONS  
AUTOMOBILE and  
SUPPLY DEALERS and REPAIR MEN.**

FOUNDED BY  
**THE CHICAGO GARAGE OWNERS'  
ASSOCIATION**

Published monthly at the Transportation  
Building, 608 S. Dearborn Street, Chicago.

Entered as second-class matter March 20,  
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der the act of March 3, 1879.

#### Subscription Price, Postage Prepaid

	Per year
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Canada .....	1.25
Other Countries in Postal Union...	1.50
Single Copies .....	.10

Unless otherwise specified, subscriptions  
will begin with the number following date  
on which subscription is received.

Advertising rates may be obtained upon  
application.

## THINGS TO SELL.

Nearly every new attachment or device put on the market affords the automobile dealer a separate and distinct merchandising opportunity.

It is impossible for every dealer, garage operator and accessory man to stock all the new things that come out. But it costs nothing to keep posted regarding new devices or to make consistent efforts to sell a certain few of them—first investigating and satisfying yourself respecting their merit. This course will do more to make a merchant out of the dealer-garageman than anything that could be undertaken.

Out of the hundreds of appliances and improvements brought out each year possibly ten per cent ultimately

become a part of the standard equipment of one or more cars. This business, therefore, is of a transitory nature, viewed from one angle, and permanent in character when looked at from another viewpoint.

Attachments, parts and improvements of old parts, put out independently this year, are brought to the attention of engineers who design automobiles and are accepted, rejected or modified. The first year's sales are for new installation. Those of the second year are for replacement and for installation on old cars.

Our friends who claim to be humorists assert that a car costs \$800, factory equipped, and \$1,600 when ready for the road. That is an exaggeration, but it is true that the retail automobile trade should regard each new car owner as a possible customer and each newly purchased car as the framework to which to attach a number of the more desirable devices, restricting effort to those the value of which has been thoroughly proven.

Just by way of test, how often have you seen a customer examine a device affixed to another car and heard him declare his intention to procure one?

Did that expressed intention fix itself in your mind, or were you intent on measuring five gallons of gas and did you fail to sense the opportunity to make a sale and turn a profit into your treasury?

You did not have the appliance?

Possibly not, but neither did your customer. He probably made a

number of inquiries before he found out what he wanted, or he may have sent direct to the factory or distributor for it. If he was determined, he got what he wanted, and some one made a profit by supplying him. It's too bad if that some one was not your good self.

## DIVIDING YOUR TIME.

Can you find time to read a paper, to gossip with a friend, to look after your personal affairs, to do any of the many things busy men are asked to do, want to do and feel they have no time to do them?

Garagemen are busy fellows. They are servants of the public, dependent on the patronage of the public, which goes by favor, for their custom, out of which they make their profits.

How is it possible for them to find time to live, to conduct their business and also time to do their part toward conducting the business of the industry, which employment, for want of a better name, is called association work?

Go into the office of the manager of any large business enterprise and talk association to him. The story usually is the same, and this is its substance: "I believe we have too many associations. It costs a lot of time and money to keep in touch with what is going on and to do our bit of the work. It might be possible to consolidate some of the work and do away with seeming duplication of effort. Give them up? Under no consideration. Associations are worth more than they cost."

This class of business men find time for association work. They make the time. They realize that when men engaged in any line of business get together for the purpose of standardizing methods that they, a fraction of that business, are vitally concerned in what is done.

Association work may be defined as the government of business. All interests are invited and entitled to be represented, but the organization is without police powers to compel interest or attendance. That part of it must be wholly voluntary. In business, as in politics, it is up to you to

decide whether or not you will vote.

You can find the time, because other men just as busy as you are do find the time to take care of this part of their business. Their attitude is that association work is a part of their business and one demanding their personal attention.

## WHY ISN'T THE RETAIL AUTOMOBILE TRADE MORE PROSPEROUS?

Garagemen and car dealers size up the business transacted by some of the large retail accessory stores of the larger cities, ranging from \$75,000 to \$100,000 a year, and, enviously computing the possible profit, which they estimate at 20 per cent, they are inclined to become envious of the good fortune of the owners.

Perhaps it will serve to reestablish confidence in their own business to learn that some of the proud owners of such concerns are drawing nominal salaries of \$40 to \$50 a week, and that is all the profit they are deriving from the enterprise.

"But that is not possible in a business that is conducted in a sane manner," objects the garageman and car dealer, who outside of the cities is just one fellow, usually a pretty good fellow at that.

It may not be possible, but it is an absolute fact, according to the impartial testimony of the men who eliminated himself from the struggle because there was nothing but work in it for him.

The fact is interesting. The reason is of much greater interest.

The reason is identically the same as that which causes garages and agencies to change hands at the rate of once every three years. *That reason is lack of profit.*

Sufficient of itself? Surely.

But what causes the lack of profit?

Divorce that question from the affairs of the man or men that are doing \$100,000 in business in a year, from which they derive the clerical salary of \$2,000 to \$2,500 a year, and apply it to your own affairs.

What is the cause?

Is it lack of industry on your part,

or is it because you are not making as much money as you think you are making?

Getting into the heart of this question will bring you face to face with the problem of what you are spending, as well as what you are taking in.

Take a concrete case. You sell a set of chains for \$6 for which you paid \$4.50. That looks like \$1.50 profit, but is it?

You paid freight on the shipment, but it was not much. Place the freight charge at 5 cents. You wrote an order for a half dozen sets and that order cost you 6 cents, bringing your expense up to 6 cents per set. You sent a man in a service car to the freight depot to get the shipment. You would charge anyone else 50 cents for the trip, so why not charge that to your cost? You must pay it, anyway.

It took you, personally, fifteen minutes to sell that particular set, and your time should be worth \$1 an hour, which makes a charge of 25 cents against that set. One of your men spent fifteen minutes adjusting the chains, and that is shop time, for which we will charge 15 cents.

Then this set of chains should pay something toward the rent; place that charge at 2 cents. Light, heat, insurance, taxes and general expense must be paid, and it is only fair that this set pay its share of such items, say another 2 cents. Summarizing these deductions gives us the following:

Stationery and postage....	\$ .01
Freight, etc. ....	.05
Sales expense .....	.25

Shop expense .....	.15
Rent .....	.02
General expense .....	.02

Total .....\$0.50

Deducting that total from the gross profit leaves a net profit of \$1.00, instead of an assumed profit of \$1.50. If you figure everything in, rent, light, heat, taxes, supervision, wages, office expenses, advertising, insurance and a salary for yourself—don't forget that, because no one else will run your business for nothing—you will find your expenses will average 10 to 15 per cent of your gross sales or income.

It probably is costing you 60 to 90 cents to sell a set of chains, instead of 50 cents.

Let us assume that you are making 90 cents net on the sale. You may be reluctant to part with the idea that you are making \$1.50, but you must pay your cost of doing business, and if you are wise you will charge it to your business and thereby learn what it is costing you.

The great trouble with the automobile trade is that there has been too great an apparent profit, while the real profit has been too small. This seeming profit has encouraged price cutting and, in the absence of absolute knowledge of cost, the selling price falls below the cost of furnishing the service or the materials, with results that are disastrous to the man who owns the business.

There is only one remedy:

**KNOW YOUR COSTS.** Don't guess, or suppose or imagine or believe, but *know what they are*, and regulate your charges and your profits accordingly.



# Intensive Cultivation in Merchandising

## —Sowing the Seed of Future Business

Following the conclusion reached in the previous article, that newspaper and direct mail advertising were the only methods of publicity worth considering as sure producers of new business, we will now take up the matter of newspaper space and the kind of copy it should be filled with.

It is not so important that a large space should be contracted for as that some space should be used regularly, and that the copy should be changed at least weekly. Where such an arrangement is possible, it is best to reserve space on a particular page, so that readers will always find it in the same place, and will come to look for it there.

As small a space as seven inches can be used very effectively if it really contains news. Three insertions weekly, where a daily is used, will be found almost as resultful as daily insertions.

### Store News.

Advertisements are primarily store news and will be considered as such and read as carefully as any other part of the paper if the dealer does his part in editing them and making them interesting.

The writer advises two styles of advertisements to be used alternately. One mentioning specific articles and naming prices. The other emphasizing the service offered to patrons.

You cannot emphasize service too much—and by service is meant your desire and ability to give entire satisfaction.

Once convinced that he can place absolute confidence in your statements about anything you have for sale, and you have gone a long way towards making a permanent customer. He will not be so likely to allow cut price offers of others whose reliability he does not feel so sure of to tempt him to take the chance of inferior goods.

Where as small a space as seven inches is used there is not much room for display, but the head line can be in fairly large sized black-face type, as should the signature at the bottom. The smaller light-face type would be suitable for the body of the advertisement. It is a very good plan to have a distinctive signature engraved, and use it as a kind of trade mark in all newspaper advertising.

### Direct Mail Advertising.

Next comes the matter of direct mail advertising. To obtain the most business possible in a given territory letters must be used. The right kind of letters are not expensive for they produce a greater volume of immediate returns than any other form of advertising, and this is

BY W. B. PARKER.

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(This is the second of a series of three articles describing practical methods the Automobile Dealer and Garageman can use in business building. The writer believes many men are unnecessarily limiting themselves as to the extent of territory in which they reach out for new business, and others are not getting the results they should, even in the limited territory they are attempting to cover. Each of these classes will find ideas in these articles that can be put into actual, immediate practice, and that if so used should prove "cash-producing.")

true even where the persons receiving the letter live near the sender's place of business and are personal acquaintances.

People like to feel that they are considered such desirable customers that this special effort is made to get their business. Such letters should have one or two objects in view—either the making of a special, time limited offer on certain merchandise, or should emphasize the service offered patrons at all times, with special mention of some particular article likely to appeal to the greatest number.

General letters, merely inviting the recipients to trade with the dealer sending them are not effective, at least as to early results, and should be avoided. Following is a sample of a service letter with a particular item mentioned. It has the elements of a successful sales letter, first, because it is so short that it is easily read

and remembered, second, the first paragraph indicates financial benefit to the reader, third, the special item mentioned gives the reader a particular offer to consider at the time, and, fourth, because the closing paragraph suggests a reason for calling even if not ready to decide on buying anything.

Much attention should be paid to the appearance of all letters sent out. It pays to use a good quality of paper and to see that the general appearance is good. They should be printed in imitation of type-writing through a silk ribbon, as is done on the multigraph and similar machines, although the work can be done on an ordinary printing press, if the printer understands the process. A blue or purple ribbon usually gives good results and if a typewriter is convenient the letters should be "filled in" with the name of the recipient, as indicated in the sample. Otherwise, the salutation may simply be "Dear Friend," and printed with the balance of the letter.

Each paragraph should be indented and spaced so that it stands out clearly and is easily read.

In every case, however, all letters should be actually signed with pen. Letters should be used at least once in every four months, but never oftener than once a month, to be most effective.

## Interesting the Customers

Dear Mr. Smith

When you spend your good money for Motor Car Supplies you want to feel sure of securing full value. You want to know that should anything go wrong it will be promptly made right.

That is exactly the kind of service we offer you. With us, no deal is complete until the customer is satisfied. It's the modern way of doing business, and it is the only way that is really worth while.

This matter of service is one we want to emphasize. While we keep nothing we cannot honestly endorse, yet it often happens that an article that is good under some circumstances is not so suitable under others. We stand always ready to give you the benefit of our expert knowledge and unbiased opinion.

Just now, we offer a special inducement in a thoroughly reliable automobile oil at only 27 cents a gallon in 5 gallon lots. This is only one of a number of items that are of more than ordinary interest to the careful buyer.

Whether intending to purchase or not, you are extended a cordial invitation to inspect our display during the coming week. You will be certain to be interested in the up-to-the-minute line of accessories and supplies we are now showing.

Yours very truly,

DEALER & COMPANY.

# Talks on Retail Automobile Topics

## EVERY DEPARTMENT SHOULD PAY A PROFIT.

ROCKFORD, ILL., June 21.—Editor GARAGE EFFICIENCY: I noticed in your last issue an article headed "Halbert's Editorial." In talking to a friend of mine about this article I gained the following information:

On a garaging proposition which he is interested in he pays a rental of \$60 per month. He has an income from storage of \$153.70. The total costs on this proposition, including rent, light, heat, insurance, taxes, depreciation, telephone service and labor amounts to \$198.50 per month, thereby showing a loss of \$44.80 per month.

These figures show that on a \$60 a month rental that the income must be \$138.50 above rent or a little better than two and one-half times the amount of the rent in order to break even and not show a loss. In other words, in order to show a decent net profit a man must have a gross income of about five times the amount of his rent.

Personally, I cannot see why the garaging of cars should not show a legitimate profit of itself rather than to have to bolster up that department and cover the loss in that department by taking some of the profit from another department. I believe that every department should pay its same proportion of all the expenses in that department, and that every department should show a reasonable net profit on the volume of business done in that department.

JUD S. JOSLYN.

## KEEPING THE STORAGE RECORD.

INDIANA HARBOR, IND., June 17.—Editor GARAGE EFFICIENCY: If it is not presuming, we would like your suggestion as to "keeping track" of storage. What is the system advocated by most up-to-date garages? Should each storer be presented with a card or ticket, which same ticket is to be left in office when storer brings in car at night and called for in morning before he may remove his car?

We keep about thirty cars and several transients, especially among our town residents, who sooner or later build their own sheds. Our bookkeeper has quite a job keeping track of when they leave and we have several misunderstandings. We keep a registration book in the office for all storers to sign upon entering. Is this customary?

We enjoy GARAGE EFFICIENCY very much and take this opportunity to ask your assistance in a matter that will be everlastingly appreciated.

HARBOR GARAGE & MACHINE CO.

(One method has been suggested. Others will be welcome. Why not send one?)

## WHAT THE BOOKKEEPER THINKS OF ADVERTISING POSTERS.

The picture gallery of a garage is more apt to become overstocked than any other department.

There being a demand for accessories, they are sold out, stationery is used, the wastepaper basket is emptied, boxes put aside for kindling and junk sold to the junk dealer, but every mail brings a new addition to the picture gallery and the proprietor, entranced by the first glance, becomes infatuated and hunts a nail or tack in the wall to hang it up.

What a motley collection we do get. Tires, batteries, spark plugs, tops, tubes, trailers, speedometers, gasoline, all too numerous to mention.

A red devil looked boldly at me for months from across the room, while a grinning red faced man on a bright blue background smiled incessantly from another wall.

So much that is grotesque and unseemly is combined in advertisements that it is a detriment to the article rather than a boost.

Did you ever notice that the character of the man who advertises peers through his advertisements invariably?

The character of the garage also is portrayed by the kind of pictures that compose its picture gallery. There is an atmosphere of refinement about well-kept, clean and up-to-date surroundings, but to keep them so the bookkeeper has a continual battle to fight with the no-good advertising matter continually pouring in.

Who is to blame?

Why, the men who are in the advertising business.

They design just as tailors and dress-makers design their ware and place them before their patrons to choose from. When will we have thorough-bred advertisement men instead of cheap, ludicrous know-nothings?

Does the cheap kind pay?

Thousands of dollars are consigned to the waste paper basket every morning without performing their intended mission.

For a poster ad no better exists than the calendar which comes to stay a year and must be given a prominent place. If the garage men would ditch all those with cheap, distorted pictures on, perhaps it would help to set a standard. To be attractive a calendar does not require a picture on it, anyway. Far better have just the advertisement in good lettering

than some incongruous suggestion in picture form. I have in mind one hanging above my desk, the lower half of which is a distinct, plain figured calendar, while the upper half is gift lettering on a green background.

For a few months we had a poster on one of our walls that was somewhat of an amusement to all who entered and possibly a good lesson.

One day the proprietor asked me for a large cardboard, a lettering pencil and a list of the bad accounts. With a dashing hand he wrote across the top "Accounts for Sale," and underneath the men's names.

It did not seem very attractive to me, but I don't think anybody ever stepped in without remarking on it and asking me if the Mr. Jones therein mentioned was the insurance man, and if T. A. Noble was Tom Noble, and expressing their surprise at the delinquency of such men.

A man who lived in a nearby village went so far as to tell one of the victims on the poster, at a social gathering one evening, that he had seen his name so displayed in an Indianapolis garage. The victim never showed up, but we received a check soon after.

I think it made quite a difference in the payment of the up-date accounts also.

This poster lost its moorings and floated off sometime ago, but its memory lives on.

I once had the pleasure of seeing a fine collection of paintings in an old plantation home in Louisiana and I marveled at the discretion of the planter portrayed in his selection from the paintings of the world, but I think it requires as much discretion on the part of the garage man in the selection of the pictures for his gallery.

AN INDIANAPOLIS BOOKKEEPER.

## THAT "JES GETTIN' BY" CLASS.

CAMBRIDGE, WIS., June 29.—That contribution from Indianapolis is good. We read it with great interest and hope to read more from the same author. We have not the time to make scientific deductions, wish we had, and are unable to make a guess at the author's personality.

I think you will find, in the course of time, that nearly all garages in small cities, villages and towns need a better system of bookkeeping. It is the one, two, three and four man garages that have poor systems of bookkeeping. There are many of these garages throughout the country and it is my honest belief that over half of them are "Jes Gettin' By."

Where the manager of the garage is also the owner and has to be the last



court of appeal in mechanical difficulties and must, also, jump out to the street to change tires or sell gasoline there is a natural tendency to let the bookkeeping end of it slip just a little.

I have in mind a garage in a city of 5,000 not over twelve miles from here. It changes hands every year.

That garage has a location on the main street and there is no real competition for the owners to worry about. Still, they are unable to make it go. The trouble is that these men (we have seen half a dozen come and go) do not read and have little business ability. They have all been good mechanics, but if I went into that garage this morning and tried to get a subscription for GARAGE EFFICIENCY I am firmly convinced that they would refuse. If they took the magazine they would not read it, which would be nearly as deplorable.

They must be educated to a higher standard of reading and to make this reading seem less dry it might be introduced in some sort of story form. We wish we had the ability to tell them what we know.

J. W. HAYDEN,

The Cambridge Garage.

Quit your wishing and go to it. You have the ability and your letter demonstrates that fact.

#### BOOKKEEPING SYSTEM WANTED.

YOUNGSTOWN, OHIO, July 8.—Editor GARAGE EFFICIENCY: We are interested in an up-to-date and as simple a form of bookkeeping as possible for garage and car sales work. This system to cover both retail and wholesale car sales.

We would be pleased to have you send us whatever blank or forms you might have and would also thank you to send us repair card forms. These cards should be made up in such manner that stub may be given to customer to identify him when calling for his work, and also to be made in such size that descriptive matter concerning repair work can be filled in on the card.

Any other suggestions that you might be able to make will certainly be appreciated.

JAMES A. HENDERSON.

Why not help out?

There is a strong demand for methods of accounting, for forms, and stocks record cards.

Many dealers have installed elaborate systems, part or all of which may be used to advantage by others. business and efficiency experts.

The great trouble is that no two concerns do business in exactly the same way and consequently their bookkeeping systems must show that variance that makes the adoption of a standard system of accounting almost impracticable.

At the same time certain parts of the

records of the business can be accounted for on standard forms.

Set of forms have been sent. Others are needed. Who will be the next to help these inquiries to the right kind of forms?

#### MICHIGAN JOBBERS AND DEALERS UNITED FOR A BETTER AUTOMOBILE TRADE.

A story is told in the last, which also is the first, number of The Michigan Automobile Trade Bulletin, that is of primary concern to many. For several years the retail automobile trade interests of that state have been endeavoring to improve their business condition.

The value of such an improvement to

the general retail trade and to all who come into contact with it is now being recognized.

The most striking and helpful recognition secured thus far was from the Michigan members of the National Association of Automobile Accessory Jobbers, which endorsed the work of the Michigan Division of the National Automobile Trade Association and pledged their individual and collective support.

The basis on which this support is to be given is outlined in the accompanying plate of the agreement. This means a great deal for the retail automobile interests of the state.

Detroit Mich. June 13, 1916

L.C. Steers, Secretary  
Michigan Automobile Trade Association,  
Detroit, Mich.

We, the undersigned Michigan members of the National Association of Automobile Accessory Jobbers, do hereby indorse and pledge our support in every way possible, for the advancement of the MICHIGAN AUTOMOBILE TRADE ASSOCIATION, which is the Michigan division of the National Automobile Trade Association, and will instruct our travelling salesmen to work with their officers, for the advancement of their Association work in the upbuilding of the retail end of the Automobile Industry, and their endeavor to place the Garage Business on an equal basis with other mercantile lines.

Respectfully submitted,

*The Automobile Accessory Jobbers*  
*H. J. Brown*  
*General Sales Co.*  
*Per Nelson J. Clark*  
*The Automobile Supply Co.*  
*A. R. Thompson*  
*E. C. Bowman Co.*  
*E. C. Bowman Pres.*  
*Robert J. Hansen*  
*H. Pocher Jr.*  
*Manning Brothers*  
*W. C. Manning Pres.*  
*Trish Auto Supply Co.*  
*Emil Wick Co.*  
*Recher Auto Co.*  
*R. C. Recher*

# Tire Salesman's Story of Garagemen's Opportunity

"I get around among the garages a good bit," remarked the tire salesman. "We are making a special push for this trade and we are getting a lot of it. There is no one that has a greater leverage on the tire trade than the garage operator."

"Will he ever get all of it?" an interested member of the group asked.

"He will not. There are too many people after this business for it to drop into anyone's lap, but he can get the bulk of it, or a fair share of it, the outcome being determined by his own action in the premises."

"How can I get the tire business of my customers?" a garage owner demanded.

"Go after it," was the tart response. "You won't get it all if you do make an effort, but it's certain sure that you won't get any of it that is worth having unless you sell your customers tires."

"We have a raft of unfair competition in our neighborhood," remarked a thoughtful member of the group, "and the tire business is not very profitable. There is very little, if any, margin in it for the garageman. Too many of our customers are rated 'commercial car operators' and given preferential rates to leave much in the business for us."

"In that case," replied the tire salesman, "you should show up the situation in its true light and have the custom remedied. The big tire companies are in the business to stay. This is a big country, and it is hard to watch every dealer in every corner of it. Get your evidence and report, or have your organization report, the circumstances to which you object and you will find that dealers who are not acting in good faith will experience some difficulty in securing supplies in the future. But get your evidence, and get it straight. Spend a little time, a little money, if necessary, to get the goods, then take your story to headquarters. Don't rest

content with talking it over among yourselves."

## Waiting for the Business.

"I was in a Chicago garage recently," continued the tire salesman. "It is one of the best kept garages in the country, everything clean and shipshape. The owner sat at his desk, looking out at the passing throng. We talked generalities for a while, and then I asked how he was fixed for tires.

"Very little doing in that line just now, and I've got a pretty good assortment on hand. Might send me a half dozen thirty-fours. One of my customers needs a new set all around and there are a couple of others that are ready for the junk man. I'll take a chance on selling them."

"That man has fifty cars in his garage. Figure that at 200 tires a year and figure that he intends staying home and intensively cultivating his home field. Well, I do not believe he is selling to exceed 50 per cent of the tires his customers use and doing little, if any, outside business.

"The trouble in that case is lack of understanding. That man has a fine place, he understands his business and knows how to handle cars and customers. What he doesn't know is how to go out and get cars and customers. That is where he falls down. He does not push his business, does not go out after it. Let's call that a temperamental condition. It is one that easily could be overcome."

## Bringing the Business In.

"How?" demanded several in chorus.

"Well, my job is to go out and bring in the business. There are several hundred thousands of others engaged in the same work. We are called salesmen. We sell things.

"Garagemen are visited by a number of salesmen every day. A few make us their friend, many give us an indifferent reception. We may

leave out that minor class that never has time 'to waste on salesmen.'

"Your buyer is on the defensive. Always. He is trying to invent reasons why he should not buy. He does not want to part with his money. The salesman is plausible, convincing, positive. It's his business to sell things, and if he holds his job he does sell them.

"Now, every garage operator, accessory dealer and car dealer who handles supplies is receiving a liberal education in salesmanship at first hand every day in the year. The chief trouble is he does not know it, does not pick up sales talk or methods and does not use them."

## Picking Up Salesmanship.

"But," objected a garage owner, "no two salesmen talk alike. No two of them are alike. Their methods and their manners are different."

"But they all tell the same story, and that story is buy! *buy!* BUY!" said the salesman. "Now, we go further than merely asking our customers to buy. We are anxious to help them to sell. We are after the ultimate consumer, the man who uses tires. It does not help us much for one of you garagemen or accessory dealers to put in a small stock of tires. We want you to sell the tires you buy and then buy again. We want to expand our trade, and you are the medium we are using because you are in close contact with the people that are using tires.

"It works this way: We can and do tell you about the merits of our tires and our methods of distribution in advertisements, letters and circulars. Then we come to see you, for we must develop personal acquaintanceship to continue to do business with you.

"Garagemen can reach out in the same way. We are helping our patrons advertise, furnishing printed booklets and similar literature, and it all helps, but such efforts are not sufficient. You should build your

personality into your business. Unless that is done it will be a sort of dry-as-dust affair that will be without interest to your customers.

"A man weighing three hundred pounds comes in and gets your order. The next salesman that comes along may fall short of 110, but he gets your business, and the fellow in between does, and the tall fellow, the short fellow, the lean, the thick and the fat.

"How do they do it? They talk their goods and your side of the transaction. They are trying to help you by helping themselves.

"Suppose we opened the most wonderfully equipped salesroom in the city, that we put in a large stock of everything we make, and then, having prepared ourselves to handle business, suppose we sat down and waited for it to come to us. How much would come?

"The live fellows on the street would walk away with the trade. How many of you would come in, hunt me up and insist on placing an order with me? You might do it once if you had to have my tires, but the next time you would persuade your customers that the other fellow's tires are as good as mine, and he would get the business."

#### Working Your Customers.

"And if I went around to my customers' homes and solicited business I would have the door slammed in my face," replied a garageman, with a laugh.

"I am not so sure of that, but why go to their homes? They come to you, every mother's son of them. Why not cultivate them while they are in your place of business? Why not talk shop? Why not dig into the merits of new devices that come out? Why not talk such things over with your customers and, if they are interested, sell them what they want?"

"We have so many different things to look after that we cannot give our time to working out such problems," objected a garage operator.

"Any man engaged in business could say the same thing," replied the tire salesman. "We have one

illustration in the business world of the man who was too busy to manage his own business. He was the shoemaker. 'Way back in the early days he made the shoes for the people of his locality. His was an important business. He made shoes and repaired them. Of course, his shoes mostly were boots. Machine-made shoes came on the market, but the advent of such inferior goods did not worry the shoemaker. The old-timers stood by him. They brought him their trade, and he was satisfied, and would have nothing to do with the new-fangled notions.

"Where is your shoemaker today? He has a little hole in the wall and is putting half soles on old shoes.

"If the men who own and operate garages desire to continue to be a big factor in the game they must change their attitude and their tactics. They must become real merchants, real business men.

"They must develop a nose for business and follow it as a hound follows a trail."

"That listens good, but," said the garageman.

"Listens good, but," responded the salesman, "should be written by the sheriff as the cause of the decease of the late lamented, when he sells the business to the highest bidder."

#### A NATIONAL TOURING WEEK.

Much interest is being manifested throughout the country in what has been designated National Touring Week. An effort is being made to induce every car owner who can do so to devote the week of August 6 to 12 to touring, and the indications are that thousands of motorists will heed the call of the road at that time.

Great preparations are being made all over the United States to provide comforts and conveniences for the tourists who participate in this big motoring festival, which, it is expected, will become an annual event.

The fact that such a thing as a National Touring Week has been proposed is an eloquent tribute to the people who have taken the initiative in improving the roads everywhere in this country. Not until very recently has touring on an extended scale been possible, because the public highways were usually in such a condition as to preclude the possibility of having comfort or even safety if one ventured in an automobile beyond the paved streets of the cities.

Now the country districts often provide really better automobile roads than are to be found in the urban districts, and with the improvement of the roads and the growth of touring has come a betterment of hotel and other accommodations in the rural communities.

All indications point to a big success for National Touring Week this year. From every quarter of the country come reports of preparations on the part of car owners to devote the second week in August to touring, either locally or extensively.

It is really to the interest of everyone who owns an automobile to take part in this big demonstration. By so doing each motorist will help to impress highway commissions and public authorities generally with the importance and necessity of keeping up the good roads movement and carrying to a splendid completion what has been so well begun.

#### FUTURE OF RUBBER.

In a Goodrich advertisement in the Chicago Sunday *Tribune* (July 9) appeared a statement respecting the future rubber supply that is of more than passing interest. It was said:

"Here is a barometer of present and prospective expansion in the rubber supply:

	Tons		
	Plantation.	Native.	Total.
1905 .....	145	60,800	60,945
1907 .....	1,000	68,000	69,000
1909 .....	3,600	65,400	69,000
1911 .....	14,100	61,900	76,000
1914 .....	64,000	60,000	124,000

#### ESTIMATED PRODUCTION AFTER 1914.

1917 .....	147,000	34,500	181,500
1919 .....	183,000	30,000	213,000
1921 .....	209,000	30,000	239,000

"The significant feature of the above is the enormously increased growth of cultivated rubber on plantations.

"That is what lifts the rubber industry out of the hard bound limitations of the leather working industry and other industries depending on a receding supply of raw material for an increasing population.

"The world should be vastly interested in sound, dependable and scientific expansion of the rubber industry.

"Because rubber is such an adaptable material that it is capable of not only substituting the most important of the failing materials, which (like leather) are disastrously lessening in production, but it already enters into scores of forms that touch the life of every person today."

The facts recited should become the common property of the people of the world. On the millions upon millions of acres of tropical lands suitable for the production of rubber can be grown all the rubber the world can use. There is indeed an increasing supply and that increase can be raised to any needful point.

# What the N. A. C. C. Believes Standard Service Should Include

## WHAT THE N. A. C. C. BELIEVES

### STANDARD SERVICE SHOULD INCLUDE.

You men who sell and care for cars have your own ideas of what service is, what it costs and how it should be administered. The big question, the one that looms large on your horizon, the one that affects your future satisfaction and prosperity has to do with the question of who shall define service?

You are a dealer in service. You manufacture and sell that somewhat intangible commodity. You know, or should know, what it costs in time, in thought, in labor and materials.

Shall the manufacturer define service for you?

Are you willing to turn the entire subject over to him, to wash your hands of it and abide by his conclusions?

He does not ask you to keep "hands off." He believes you know a lot about the question, but you, the dealer and garageman, have never gotten together and expressed yourself in a collective way. You have no class opinion and your individual opinions are as diversified as is your separate and many personalities.

#### A Compromise.

Most trade questions, about which there exists a radical difference of opinion, are compromised.

This one of Standard Service and Repair Part Policy is one that should be thoroughly ventilated before it is finally adopted and established as a definite standard by which your business—and your profits—are to be regulated.

Manufacturers of automobiles are organized and capable of taking action. There exists a powerful organization of manufacturing interests, the purpose of which is to promote the welfare of its members. It is not primarily interested in promoting your interests, or conserving your business. That problem is left for you to handle.

This organization is not unfriendly to the dealer-garage man in an active sense. It merely is ignoring him because it is impossible to work with the dealer in a collective way.

Essentially the members of the National Automobile Chamber of Commerce make contracts with the customers of the retail car dealer, and then say: "It's up to you, Mr. Dealer, to carry out the contract we have made. We are trying to standardize this contract so you, and others

like you, will know exactly what your responsibilities and duties are."

The "Service Policy" of the N. A. C. C. is exactly what is required, *provided the dealer declines to think for himself*. If the dealer is a thinking animal he probably will find flaws in the "policy" as it has been defined.

If you do find flaws you should report them, with your suggestions for changes, to the National Automobile Trade Association, 208 South La Salle Street, Chicago.

#### N. A. C. C. STANDARD SERVICE POLICY

The Blank Motor Car Co., through its dealers, aims to give all purchasers of Blank cars uniformly fair, courteous and businesslike treatment and to assist them in every reasonable way to keep their cars in good running condition.

The principles of this policy are:

First—To fulfill the obligations assumed under the manufacturer's warranty.

Second—To furnish repair parts as promptly as possible at our current prices.

Third—To maintain facilities for making repairs, adjustments and do general overhauling in a prompt and competent manner at reasonable charges.

Fourth—To make inspections and adjustments, not necessitated by neglect or abuse, free of charge for one month following delivery of a new car to purchaser, and thereafter at our regular prices.

Fifth—To furnish printed instructions in the operation and care of our cars.

Sixth—Service to be rendered does not include furnishing repair parts or labor without charge, except as provided in the warranty and in the following specific clauses of this Service Policy.

#### Replacement of Defective Parts.

(a) Within ninety (90) days after delivery of a new car to purchaser the Blank company will furnish, free of charge at the factory, duplicate parts to replace any parts as covered by our warranty that are returned to the factory with shipping charges prepaid and which are determined by the company to have been defective in material or workmanship, or it will put such parts in condition as good as new without charge.

(b) Within ninety (90) days after delivery of a new car to the purchaser the dealer will install, free of labor charges, any parts that the factory furnishes or repairs free of cost to replace any parts determined by the factory to be defective, the purchaser to assume cost of replacement parts and installation of same pending factory decision.

(c) The party returning the parts will be notified promptly of the decision of the

factory regarding allowance of a claim for replacement or repair of parts returned.

#### Inspection and Adjustment.

(d) Cars brought to service stations maintained by factory, branch or dealer will be inspected and all necessary adjustments will be made as in paragraphs (e) and (f) without charge during the first month after delivery of a new car to purchaser, provided the car has not been tampered with or injured by accident or neglect. After the first month adjustments will be made at the regular charges of the service station.

(e) Inspection includes examination and report of the condition of the car.

(f) Adjustment includes only such adjustments as inspection has found necessary to put the car in good operating condition.

(g) Every dealer is expected to give the same inspection and adjustment service on the cars made by this company without regard to the territory in which they were bought.

#### Repairs, Replacements, Etc.

(h) All work not included in inspection and necessary adjustment during the first month, or installation of replacements under the warranty, will be charged for at regular rates.

(i) When any charge work is to be done and the cost can be estimated in advance, the owner, upon request, will be advised of the amount of the charges before the work is begun.

(j) When it is necessary, for the convenience of the owner, to render service at a distance from the service station, the time spent by employees going to and from the job will be charged for at the regular rates of the station, together with all proper expenses of making the trip, cost of shipping parts, if any, and other necessary incidental expense.

#### Overtime Work.

(k) Any overtime, holiday or Sunday work done upon the request of the owner will be charged for at the regular overtime rate.

#### Instructions in Care and Operation.

(l) Instructions in printed form regarding the care and operation of the car and its accessories, and proper method of ordering and returning parts, will be given the purchaser upon the delivery of the car.

(m) Personal instruction will be given in accordance with the agreement between dealer and customer at the time of purchase.

#### General.

(n) For service and replacement on engine starters, batteries, magnetos, generators, lamps, carburetors, tires, rims or other trade accessories that are not made by the manufacturer of the car, application may be made direct to the nearest service station maintained by the maker of such accessory. Dealers will be provided with a list giving names and addresses of the manufacturers of said accessories.

(o) No promise of service, free repair work, inspection or adjustment, except as herein specified, given or made by the dealer, shall be binding on the manufacturer of the car.

(p) To help the dealer carry out the intent of this Service Policy, the owner is requested to furnish all information necessary to the prompt and proper filling of orders and issuing of credits and to observe the requirements regarding return of parts with claims for replacement.

(Signed) THE BLANK MOTOR CAR CO.

#### N. A. C. C. STANDARD REPAIR PARTS POLICY.

The purpose of this policy is to place the relations between the Blank Motor Car Co.

half millions, and net income of only three hundred thousand dollars. The amount of depreciation charged off is less than seventy thousand dollars. That is under one per cent on the plant investment. It is ridiculously small, and at the same time representative of American business."

In Uncle Sam's corporation tax reports, however this disregard of proper depreciation charges "gives an interesting paradox; for, because our business men have not yet learned to write off the shrinkage on buildings, machinery and other items chargeable to depreciation, and because it has been expedient to carry it as capital investment, they are apt to pay more corporation tax than is really due."

#### How Lax Accounting Limits Credit.

"When the business man (garage man) who keeps vague accounts and cost records goes to his bank for a loan he is unable to lay before the banker a statement that entitles him to credit in keeping with his real borrowing capacity. It is true that he gets money from the bank when he needs it and without showing a statement; but he gets very little. Most loans of that sort are of three or four hundred dollars. They amount to just about a generous overdraft on his checking account."

"If the business man could go to the banker with a trustworthy balance sheet, showing the state of his business in terms that bankers understand, he could probably borrow thousands of dollars where he now gets hundreds. This would give him larger capital to expand his business. More than that, when people who sell him goods write to his bank for a rating the bank could tell definitely how much credit he was entitled to; and it would be liberal."

"The remedy for all the evils that underlie price fixing is to bring business men together in organizations in every industry and trade, and have them work out standard cost systems for their respective lines. No general system of cost keeping will fit all lines of business. Nor will a standard form of bank statement fit all lines."

#### Better Methods Coming In.

"The big job now, Mr. Hurley thinks, is to waken American business to the need for better organization and systems. . . . Only scientific accounting and cost keeping will enable us to meet competitors at home or abroad."

"When American business wakes up to the need of these improvements it has the brains and energy to carry them out. Accurate records and cost figures in each industry will enable the business man to detect and eliminate all the price cutting that has been blind and wasteful. Then there is bound to come the only form of price fixing that is right—the fixing of prices by each concern at a level which

shows sure profits, based on absolute knowledge of what everything costs."

#### Typical Garage Competitors.

The conclusions arrived at by Mr. Hurley as related in Mr. Collins' article apply with special force to the garage business. We will suppose that, in a given town, Jones has the best location—a fine new building on the main street. Smith has a cheaper barn of a place, with plenty of room for storage, and much less overhead, but off on a side street. Brown is a specially good repair man, but has a smaller building, with a comparatively small overhead expense. Obviously, Jones has the advantage in the sale of cars, accessories and supplies; Smith on car storage, and Brown on repairing. But none of them realize these conditions, except in a vague and uncertain way, unless they have departmentalized cost accounting systems.

Blind and indiscriminate price cutting on all lines will prevent any of these garage men from making money. What is the proper course? Shall each specialize on his own most favorable line, and abandon the rest to his competitors? By no means. The good department cannot carry all the rest of the business as a dead weight. The weaker departments must at least pay for themselves.

#### Wryly's Way.

Nor is there any logic in the course recommended by a distinguished contemporary of ours, by name "Wryly," in making the "big fellows" (profitable departments) carry the heaviest load of overhead expense, and letting the "little fellows" (weaker departments) off with a load proportioned to their strength.

The garage man who *does not want to fool himself* is not asking in regard to his workmen (departments) "How much can each carry?" but rather "How much (of the gross profits) *does each one eat?*" The small man may have a disproportionate appetite—in fact in this case almost always has, for the biggest workman of all, the New Car Sales department, demands the least proportion of overhead expenditure. The object of cost accounting is not to make each department *show a profit*, but to determine the *actual profit or loss* in each department, and the *reason* for it. And scientific (which means *truthful*) garage cost accounting WILL DO JUST THAT.

#### Jones' Ideas.

But to return to our friends Jones, Smith and Brown—what are they going to do about it? Well, after they have learned the actual conditions by a careful consideration of their own monthly cost sheets, and a frank talk with each other if they are big enough and broad enough to follow that course, they come to some such conclusions as these:

Jones says to himself: I can't compete with Smith on storage prices, so I won't

try to. I'll make more money by using my good location and judicious advertising to go after the *quality* customers for storage rather than quantity. I'll charge the top price for storage and make it worth the difference, in quality of service to the men who want the best and are willing to pay for it. And the cheap man who says my prices are too high, I'll send with right good will to friend Smith. And I'll counteract Smith's and Brown's advantages on shop work in the same way—by persistent and judicious advertising of the *quality*, promptness and general efficiency of my shop; I'll hire the best workmen, charge top prices and keep it busy by efficient shop management so as to reduce non-productive labor to a minimum.

But instead of keeping up prices stiffly on parts and accessories I'll go after volume there, and a quick turnover at a reasonable margin of actual profit. If I try to maintain a list on everything Jenkins, the hardware man down the street, will get all the business. So me for the complete stock, good window display and effective advertising, and quick turnover at small profit on this part of the game.

#### What Smith Does.

Smith reasons differently, and properly so: To fill my big place which can't compare with Jones' in quality I must fix my price below his, base my advertising on price and give just as good service as I possibly can, thus gaining the good will of my storage customers and so their patronage for supplies and to a considerable extent for tires, parts and accessories. I can't hope to profitably carry so large and varied a line of these goods as Jones does, nor perhaps to always meet his prices, and I'm not going to throw away money trying to. If he'll allow me 10 or 15 per cent trade discount on purchases I'll buy such things from him as my customers call for, that are not in my stock, when I can get them to wait; and if they won't wait and I lose the sale, I'm not going to worry about it.

Careful and efficient repair shop management is just as essential for Smith as for Jones; but perhaps Smith is justified in giving a little more in concessions in this and other labor departments than Jones, owing to lower overhead. His cost sheet tells him where he can profitably make concessions to get business, of where he must draw the line to prevent losses.

#### Brown's Proper and Improper Course.

Brown, of course, specializes on repairs; adjusting his prices and advertising of other departments to suit conditions and make them show at least a small profit. But he puts his weight on getting volume into and out of his repair shop. His reputation as a repair man justifies him in charging top prices—

a little more, perhaps than Smith, and as much as Jones, who has to charge the top to break even. But Brown, being the practical repair man, is most likely to be careless and indifferent regarding his office work and methods, and to think that he must cut prices to get business in his repair shop; the result is likely to be that it is swamped for a time, jobs are delayed, statements are not gotten out promptly; collections lag, the rest of the business is neglected, poor Brown gets that worried

look around the eyes; and his customers' verdict is "Brown is a wizard of a mechanic, but he's no business man. Guess I'll go to Jones' next time." And he does.

#### How About New Car Sales?

In this illustration we have not discussed the sales agency proposition. Of the three, Jones, with his fine location, should be making the most "hay while the sun shines" in the New Car department, while by no means neglecting the other

departments; for, in reality, the New Car Sales agency is the least stable foundation for a permanent and large success for the average garage man of all his departments. Smith also should by all means have an agency, perhaps for a cheaper line than Jones; while possibly Brown will do just as well without; for with his previous training and temperament, when he does make a new car sale, he'll probably sink all his possibility of profit in the second-hand car he takes in trade.

## It Can Be Done, Electric Vehicle Men Prove It

*Just start in to sing as you tackle the thing  
That "cannot be done," and you'll do it.*

They did it in Chicago. "They" include the electric vehicle salesmen, the electric garagemen, the battery and tire dealers and others concerned in the business.

The situation was sized up, the difficulties enumerated, the sore spots laid bare, and then the men identified with the business set themselves deliberately to the task of changing conditions.

Simple, isn't it? And it is always effective.

The formula is this: Equal parts of understanding, commonsense, hardwork and sticktoitiveness. Take liberal doses until patient is relieved.

#### What Happened.

Harry Salvat was asked to tell the members of the Electric Vehicle Section of the National Electric Light Association why there are not more electric vehicles in use in Chicago.

He came across with an eye-opener in his paper, entitled "Greater Garage Service." There was an answer on the part of the Electric Vehicle interests, a further conference, and then—then the possibility of the question becoming stale and interest dying out through general familiarity with the views of all parties concerned, became manifest.

This "Exponent of Co-operation" stepped in and aided to increase interest and decide on a definite date for taking a definite step in the right direction. At the outset it was pro-

posed to hold a mass meeting. E. V. A. officials, however, claimed jurisdiction, tendered the good offices of the machinery of that organization, thrashed the problem out, and at the last meeting before the summer recess presented a solution that was adopted as an excellent foundation on which to build.

This meeting was open to all interested in the sale, equipment and care of electric vehicles. The meeting was widely advertised and a personal canvass was made of the trade to insure a representative attendance. The attendance was representative, but not so general on the part of the garage owners as it should have been.

#### The Start.

After disposing of the annual election Chairman George B. Foster, of the Chicago Section of the Electric Vehicle Association, very briefly outlined the situation, saying in part:

Mr. Foster—This meeting was called to give consideration to the relations between manufacturers of electric vehicles and accessories and the owners of garages. It is a big subject. When the matter was presented at our national convention in May your officers felt we probably could do nothing which would be of greater value to this section than to take up these differences and help to iron them out and get together on a better basis and pull together instead of pulling sideways.

A committee was appointed to look over the matter and then take up the several points and analyze them, to talk with the different parties at interest in these matters, to see if a middle course could be adopted and accepted which would relieve the situation. The report of that committee was handed to me this noon, as I sat here, so I have not had opportunity to read it, but I am sure the report will cover the subject and I am sure the work has been well done.

#### Preliminary.

Gail Reed was asked to present the complete report. After it had been read it was decided to consider the report section

by section. The recommendations will be given in that manner and a digest of the discussion, if any, of each section.

#### GARAGE POLICIES OF THE CHICAGO ELECTRIC VEHICLE SECTION N. E. L. A.

The following recommendations are offered by the special committee on garages for the full consideration of the Chicago section membership as offering a reasonable, fair and logical working basis towards bringing about more satisfactory conditions to the manufacturers of electric vehicles, batteries, tires and the operators of electric garages engaged in the sale, equipment and care of electric vehicles in Chicago and vicinity.

The dealers in electric vehicles and batteries are willing to support policies along these lines provided the garage operators agree to support the measures applying to them in this program.

#### OUTLINE OF POLICIES WHICH THE GARAGEMEN ARE ASKED TO SUPPORT.

**COST SYSTEM**—The representative garages to be willing to make the proper start in placing their business on a fundamentally sound basis by installing an adequate cost system through the medium of which they will be able to gain the proper knowledge of their business and its cost so the necessary aid can be given by the association. This plan will enable them to determine exactly what their service costs and the returns this service is bringing.

The Chicago Electric Vehicle Section of the N. E. L. A. has already offered a solution for installation of a cost system.

In support of this section Mr. Reed pointed out that relatively few of the garage operators appreciated the value of a cost system and that many of them did not know anything about what it cost them to conduct their business.

Mr. Nichols—The value of an accounting system is not easily determined. We have one and know something about it. I want to say this: You can go into accounting so deeply that the cost of cost accounting will eat up all your profits.

Mr. Salvat—I move we adopt the cost system.

#### Sticklers for Prices.

Mr. Bland—Out at Rockford (Ill.) the garagemen have installed cost systems and the result is that price cutting is dead. There is only one exception and I believe that fellow has no cost system. Whenever the cost system has been tried, by any community, section or individual, it has made those who use it sticklers for price.

Probably I have visited as many garages as anyone here. I have been pretty thoroughly over the south side garages of Chicago and there is not over 2 per cent that



have cost systems, about 2 per cent that know what it is costing them per car for space. The majority do not take out the openings, office, wash rack, repair shop, etc., and consequently do not know what rent they have to pay for the space a car occupies.

If you can show me how a man can do a profitable business and not know any more about his business than that, you can show me more than I have been able to learn myself. It is because the average garageman does not know what his costs are that he is so willing to play the cut-throat game. Every electric garageman in Chicago is losing money if he will be honest with himself and figure it out on the right lines.

We should know absolutely what space is costing us per car. It is actually costing \$6 to \$8 for space to garage a car and when the owner goes away, winter or summer, we take that car on dead storage at \$5 per month, that is we are selling something that costs us \$6 to \$8 for \$5. Are we making money? We surely are not. I am absolutely in favor of that and hope it prevails.

#### Cost Versus Value.

Mr. Simpson—Recently a garageman whose business had grown went down town to buy a \$50 cash register. Before he left the store he had paid \$450 for one and it was money well invested. There was a system of keeping records that went with the cash register and when he went into the subject he found he was losing money in some departments and made more money than he knew about in others.

Mr. Halbert asked if the system of cost accounting under discussion was for exclusively electric garages or if it could be used by combination garages.

The chair explained that the system was adequate for the needs of the garage business and designed for the purpose of keeping track of the several departments of the business and could be expanded to keep track of the cost of garaging certain classes of cars, if desired.

This recommendation was then adopted.

#### Measured Service.

**MEASURED SERVICE**—To give full consideration to placing their business on a paying basis in every department by revising the present flat rate or by substituting for it, measured service throughout. To recognize the unfairness to everyone concerned in the flat rate now in vogue.

In the course of the discussion which followed it was pointed out that the car owner who was getting \$60 worth of service for \$35 or \$40 would leave the garage where measured service was given and give his car to the keeping of the flat rate garage. That statement brought the response that the flat rate garage would go broke if filled with the long runners while the measured service garage could make money on either the light runners or heavy runners.

Mr. Nichols stated no one was kicking on the cost of current, stating that an eleven plate, forty cell battery fully discharged could be raised to fully charged condition in 17 K. W. hours, which, at 2½ cents would cost 42 cents. "That is the maximum cost. We have no cars in our garage whose owners run the batteries out every day," he said.

#### Favors Measured Service.

Mr. Salvat—I have a gasoline garage where everything is on a measured service basis. We get \$15 a month for light stor-

age and charge our customers for everything else they get. It is a pleasure to do business with those people.

Where we are getting \$25 for straight service no matter what we do for them we never do enough, in their estimation. For \$25 we clean and wash a seven passenger touring car.

I like measured service, but the electric car owners are so accustomed to getting something for nothing that I think they would kick.

It looks like we were paying \$1.11 for garaging electric cars. Rent is about 40 cents, charging, according to Mr. Nichols, 42 cents, that is 82 cents for the two items. The cost of hiking on some cars is at least 40 cents a day, so where do we get off at \$35 a month?

Mr. Nichols explained that his figures were for raising a battery from a fully discharged condition to a fully charged condition, and that the figures he gave were a maximum, not an average charge.

#### Measured Service Economical.

Mr. Halbert—We have been operating on a measured service basis for the last three years. Before we changed over we probably were cleaning thirty gas cars every night. We had two washers, three polishers and a floor man. We studied conditions and decided to make the change the first of May and wrote a letter to our customers stating we would make the change to a flat storage basis and that they would have to pay for every wash and polish after that date. We also told them that storage would have to be paid in advance.

We lost one customer. He had a car that he drove to Mount Carmel every day. It cost us about \$50 a month to take care of it and we got \$30. We lost him when we changed over. After two or three years I would not go back to the old flat basis if you paid me \$5,000 a year to stand around and watch the work done.

#### Handling the Rush.

Mr. Nichols asserted that all the cars would have to be washed Saturday nights and that the garages could not secure enough men to do the work and would have no work for them during the week.

In explanation Mr. Halbert said there might be trouble on that score the first month or so, but that with a little system the garageman could arrange to get many of the cars washed on Thursday and Friday night and the remainder on Saturday night. He said he was handling electrics on a flat rate because he had no individual meters, but that he would be glad to switch over to a measured service when the meters were ready.

Further on this line he said his men—one washer, one polisher and a floorman—washed an average of 10 cars a night. There are 58 cars in the garage.

Mr. Nichols stated that he handled the electric end of the firm's business and that the profits on electrics were greater than those on gas cars. He explained that the electrics were housed on the second floor and that the cost of operating the elevator was charged to his department. Rent is split on a fifty-fifty basis.

After a further discussion of the merits and demerits of measured service and a rereading of this section to emphasize the fact that there is no other than a business obligation to install it, this section was adopted.

#### Standard of Service.

This section was read and adopted, the only comment being made by Mr. Nichols, who said: "I think we all want that." That remark brought a roar of approval and the section was unanimously carried.

**STANDARD OF SERVICE**—To establish an adequate standard of service which shall cover the most important service requirements of electric cars, batteries, etc., with the understanding that such standard must be lived up to in order that they may obtain the support of the association membership. This standard of service to be determined by a representative body of men covering all interests at stake. Printed copies of the standard of service to be distributed throughout the association membership. Only the garages living up to this standard will receive the recommendation of the association members.

All association garages doing repair work of any nature to co-operate more closely with the dealers. For example, if they get hung up on a certain job to call on the dealers' service department for assistance or advice and not take a chance on going ahead with a piece of work with which they may not be entirely familiar. In a general way to use every means possible to keep all troubles pertaining to batteries and repairs of any nature, between themselves and the dealer.

Section 4 also was adopted without discussion.

**GENERAL**—The electric garage to use every possible means towards promoting the sale and use of electric cars and as a means to this end, to report to the secretary of the association, all leads or possible prospects so that these names can be distributed impartially to all dealers. The garages to openly talk up the advantages of the electric car and to make all customers feel that the electric is the only vehicle. In other words, the garage men to take a positive instead of a passive stand and to come out openly and strongly for the electric vehicle. The garage men to promote the association work and its benefits among themselves to keep up the enthusiasm and interest which will add members and strength to the cause.

#### POLICIES DEALERS WILL SUPPORT.

**GENERAL**—The dealers will support in the heartiest manner all Electric Vehicle Section garages in preference to all others in every way by recommending those garages in advance to all persons with whom they deal. A similar notice to be given in writing, if possible, to all electric car purchasers. Names of car purchasers to be given the secretary of the association so advance notice can be impartially distributed to all association garages.

Notice also to be mailed exploiting the Electric Vehicle Section parking system to all purchasers letting them know the great value of this service and the fact that it can be obtained only through members and garages. All present owners of electric vehicles to be notified by the respective dealers, recommending association garage service; making it plain that the dealers are openly supporting association garages above all others and telling them why.

#### Batteries.

**BATTERIES**—On repairs, where batteries are sold on a guarantee basis, which guarantee can be issued by the garage operator, all adjustments on such guarantees are to be made to the owner based on the regular retail price of the battery. Such adjustment to be allowed to be made by the garage man, battery manufacturer or dealer. Regular prices on batteries established by the battery manufacturer are not to be cut.

Speaking to this subject Mr. Bland said that the battery manufacturer should know, better than anyone else, the num-

ber of miles contained in the batteries he produces. He said he was not for the guarantee of the car manufacturer and thought excessive mileage guarantees were killing the business. He added that if the battery manufacturers would guarantee 15,000 miles, he was for that guarantee as a standard.

In response, Mr. Adams said he did not believe Mr. Bland's assertion was altogether correct and that he was willing to leave the question to the manufacturers of batteries. He pointed out that a battery could not be expected to give as great a mileage on a 50 ampere draw as on a 38 ampere draw or on a car weighing 4,000 pounds as on a car weighing only 3,000 pounds. He explained briefly the results of the 15,000 mile guarantee.

The discussion waxed warm on this point. It was interrupted by Gail Reed, who said:

#### **An Honest Effort to Get Somewhere.**

The dealers are serious about this matter. We are not trying to get the best of anyone. "We are not spending our time, and lots of it, for the fun of working. This work has fallen on the dealers' shoulders every time. All the dealers that I have talked to have been absolutely honest in their desire to get this matter straightened out," he declared.

#### **What the Battery Men Think.**

Mr. Arlington—The announced purpose and aim of the car companies is to put more electric cars on the streets of Chicago and other cities. If it is not profitable to make a 15,000 mile guarantee it should be possible to figure it on some other basis. I, personally, and my company, have always been opposed to a guarantee so high as that.

The battery company cannot make a positive guarantee on the life of an individual battery. He may guess at it. It may last that long, it may last longer or a less time. If one company can make a 15,000 mile guarantee, I do not see why the rest of us cannot. We do not want to lose sight of the fact that they may have a pretty good proposition.

I would suggest that the committee work on this question. Twist the question around the other way and let us see if, by working with this company, let us see if we cannot average it up with them and cut out the differences that have prevailed for the last two years and get down to some rock bottom basis so we will get a share of the business and each element take care of its own troubles. What I want to see is harmony.

#### **Here to Co-operate.**

Mr. Bland—I believe that section is all right. I think in time it will adjust itself. I am absolutely of the opinion that the garageman is not going to put his strength behind the manufacturer that is giving outlandish guarantees and I think that the manufacturer will be willing to co-operate with the garage owner and let him in on it.

We are here today to co-operate. I am willing to give the manufacturer all the co-operation in my system, as I have in the past.

The Chair—While we may agree to one or several of the paragraphs that have been proposed there is nothing in these recommendations that cannot be brought up by the membership at a subsequent meeting. We are here to make a start and I think we have made a bully good one.

The remaining recommendations were adopted without discussion.

**TIRES**—Whether cushion or pneumatic,

to be sold at regular retail price on which shall be given standard guarantees only, which same guarantees can be used by garage man or dealer.

**DISCOUNTS**—So near as possible, discounts on repair parts to be given only to association garage members. Where exclusive discounts are not possible, preferential discount to be given wherever reasonable, to association garage members.

**INSPECTION SERVICE**—While inspection service will be continued, this will be carried on not only as an aid to the promotion of the use of electric vehicles by keeping them in A1 running shape, but as an assistance to the garages in raising their standard of service by giving notice to the garage first on any matters needing attention on the car, not due to general wear, tear or accident. In other words, any service the car requires due to lack of proper care, will be called to the attention of the garage first. If the garage fails to honor this notice by correcting the trouble, then only will the owner of the car be notified.

On such repair work as is done by the public garages, the dealers will agree to furnish expert advice at all times on the care and repairing of cars. Furthermore, if a garage requires the special services of an expert from the dealer on any case, that the dealer will agree to furnish such experienced repair man on that particular case to assist the garage man, with the understanding that the garage man will pay a reasonable amount for the time consumed.

Mr. Bland proposed a vote of thanks for the committee, which was given with a will.

The members of the committee are:

Chairman—Gail Reed, Walker Vehicle Company.

D. E. Whipple, Anderson Electric Car Company.

Harry Salvat, Fashion Automobile Station.

The committee was continued in office until the next regular meeting.

That is all, and it was a wonderful piece of work, with yet greater wonders to follow the practical operation of the plan of co-operation adopted.

## **CLASSIFIED ADVERTISEMENTS.**

### **WANTED—OLD CARS.**

Will pay highest prices and spot cash for old cars in any condition. Jackson Auto Salvage House, 560 Jackson Blvd., Chicago.

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Many of the best selling accessories and supplies were invented by garage and repair men. Protect the ideas you develop. A patent, a trade-mark or a copyright may mean the difference between affluence and poverty in later years.

CHARLES TURNER BROWN,  
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### **Attendance.**

Elite Garage, F. E. Ingals.  
Electric Vehicle Magazine, Carlyle Flidner.  
Milburn Wagon Co., Toledo, O., Wright Barr.  
Fashion Auto Station, Harry Salvat.  
Kuehne Carriage Works, L. F. Kuehne.  
Walker Vehicle Co., Gail Reed.  
Philadelphia Storage Battery Co., D. C. Arlington.  
Firestone Tire & Rubber Co., R. J. Scofield.  
Firestone Tire & Rubber Co., E. B. Bowling.  
Bland Electric Garage, H. Solle.  
Willard Storage Battery Co., P. H. Gibbon.  
Bland Electric Garage, P. V. Burns.  
General Vehicle Co., C. W. Squires, Jr.  
General Vehicle Co., C. W. Babcock.  
Bland Electric Garage, K. E. Kelly.  
Dawson Electric Garage, E. P. Dawson.  
GARAGE EFFICIENCY, W. T. Christine.

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Size	Plain	Non-Skid	Tubes
28x3	\$ 6.35	\$ 7.00	\$1.75
30x3	6.95	7.45	1.85
30x3½	8.95	9.50	2.05
32x3½	10.30	10.85	2.20
34x3½	11.50	12.15	2.25
32x4	14.10	14.85	2.75
33x4	14.65	15.45	2.85
34x4	14.95	15.75	2.90
35x4	15.55	16.50	3.00
36x4	15.80	16.60	3.10
35x4½	20.80	21.85	3.75
36x4½	21.10	22.15	3.85
37x4½	21.85	22.95	3.95
37x5	24.90	26.25	4.50

Tires shipped C. O. D., subject to examination, on receipt of \$1.00.

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Volkcar Storage Battery Co., John M. Volkhard, Jr.

Anderson Electric Car Co., A. E. Jenney.

Anderson Electric Car Co., B. E. Adams.

Robert Bland, Evanston, Ill.

Garfield Park Garage, H. E. Halbert.

B. F. Goodrich Rubber Co., L. A. Patch.

Elite Garage, Rowell B. Swesey.

Commonwealth Edison Co., G. B. Foster.

Edison Storage Battery Co., W. F. Bauer.

General Motor Truck Co., W. J. McDowell.

Commonwealth Edison Company, Geo. H. Jones.

Grand Blvd. Garage, J. C. Nickel.

Phila. Storage Battery Co., F. E. McCall.

Electric Storage Battery Co., H. S. Marsh.

Phila. Storage Battery Co., E. V. Titus.

Hollywood Garage, A. M. Duller.

General Lead Batteries Co., D. M. Simpson.

Hertner Electric & Mfg. Co., O. P. Smith.

The Ohio Electric Car Co., E. C. Scheffler.

K. W. Battery Co., W. Bentley.  
Commonwealth Edison Co., John A. Pierce.

Edison Storage Battery Co., H. J. Butt.  
Walker Vehicle Company, C. H. Kinney.  
American Express Co., W. J. Burns.

Walker Vehicle Co., E. J. Ellton.

Electrical World, H. L. Brown.

Electric Storage Battery Co., J. M. Rosbolt.

Commonwealth Edison Co., Paul De La Cour.

Royal Electric Garage, Wm. C. Hatley.

Woods Motor Vehicle Co., P. R. Higginbotham.

### A NEW ORLEANS BRANCH.

The Edison Storage Battery Supply Company has established a new sales office at New Orleans and has appointed C. A. Luckey as resident manager.

Mr. Luckey is a graduate of Franklin Military Academy, Franklin, N. Y., 1899, and Bliss Electrical School, Washington, D. C., 1900-1901. He was connected with the Western Electric Company, New York City, during 1901-02, leaving there to go with the Safety Car Heating & Lighting Company, where he remained until 1911, spending the first four years in their electrical laboratory and then going with the Chicago branch.

In 1911 Mr. Luckey was with the Railway Utility Company, Chicago. In 1912 he joined the sales force of the Edison

Storage Battery Company, Orange, N. J., and was attached to the sales office in Chicago, where he has been until his present appointment.

Mr. Luckey's new address will be Edison Storage Battery Supply Company, 201 Baronne street, New Orleans, La.

### MAKING MONEY?

Here are some Chicago Garage signs: Plain Storage, Fords, \$3.50; Plain Storage, \$4; Full Service, \$8. There is room in such garages for additional cars.

Further up the street where the rates are more than double, the garage is full and there is a waiting list that must be a comfort to the owner's heart.

Why the difference? Simply that one garage furnishes service and charges for it, while the other is trying to make money by selling goods that cost him \$1.10 for 90 cents with the hope of breaking even on incidentals.

*It can't be did!* Not in that way. Your customers will pay willingly for knowledge, for time, for thought and for courtesy.

We enjoy GARAGE EFFICIENCY very much and take this opportunity to ask your assistance in a matter that will be everlastingly appreciated.

HARBOR GARAGE & MACHINE CO.

### POOR COMPRESSION?

Carbon Troubles? Excessive Fuel Bills? Regrinding?

Not if you profit by the experience of thousands of others, and install these Power Producers.



For every type of motor.

WE ARE EXCLUSIVE RING MAKERS. This means QUALITY & SERVICE.

**Trump Mfg. Company**

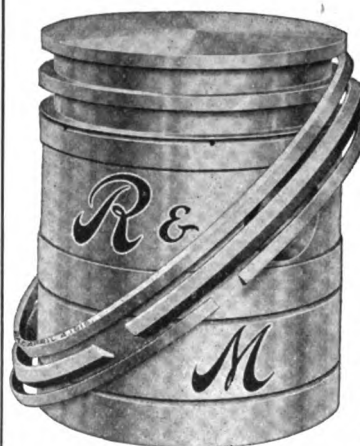
3 Union St., Crown Point, Ind.

They are putting Power into Motors Everywhere. Write for booklet—it gives the reason.



## R & M PISTONS and RINGS

*Are Without a Parallel!*



### R & M CONFORM

—"The Mechanically Right" piston rings with proven qualities and guaranteed satisfaction.

### R & M MALUMINUM

—"The True Light Weight" piston. Strength and durability greater than cast iron. Weight reduced

from 50 to 75%. Vibration practically eliminated. Increased acceleration. The combination of R & M Pistons and Rings are an INVESTMENT and not an EXPENSE.

Wire or write for Dealers' Proposition

**Modern Electric & Machine Company**  
936-940 Ft. Wayne Ave., Indianapolis, Indiana

## Best by Test Always Wear a Smile

Make your cars run smooth and easy

A Pennsylvania Product

Give us a one barrel trial order  
Special discount to Garage Men and dealers

If in need of L. O. Soap, write us for price. We have it.

**The S. A. Schwarz Oil Co.**

Cleveland Ohio Columbus  
Headquarters Cleveland, O.  
Agents Wanted. Write for our proposition.



**Non-Carbon  
Auto-Oils**

Light  
Medium  
Heavy

# Work of the Chicago Garage Owners' Association

Starting out slowly in a parliamentary way the members of the Chicago Garage Owners' Association develop enthusiasm and power of expression at their monthly meetings.

Practical subjects are brought up and discussed, a consistent effort being made to advance the matter in a way that will work to the advantage of the garage operators of the city.

## Credits and Collections.

It was suggested that the garagemen work with the Chicago Automobile Credit and Collection Bureau, through which it is possible to secure a report on the standing of any automobile owner in the city. The expense is nominal. Definite action probably will be taken at the next meeting.

## Bookkeeping.

President Halbert announced that the assistant secretary's services could be secured, without cost, to straighten out the bookkeeping methods of any member. He stated that the secretary visited the members and was in touch with the various systems of accounting and checking in

use and was able to summarize and put into effect the best methods in use. He added: "If you have a good system, tell him about it, it may help someone else out of a hole."

## Tuning Up for the Big Meeting.

On behalf of the Electric Garage Division Harry Salvat said there was nothing to report except that the committee was working hard to get things in shape and that the manufacturers of electric cars were ready to give substantial help.

Gail Reed, of the Walker Vehicle Company, in response to a request by the chair, outlined briefly the nature of the plans formulated. These are given in full in the report of the E. V. A. meeting held June 27, reported elsewhere in this issue.

## Chicago Needs Missionary Work.

Robert Bland seized upon the attendance of electric garagemen at the meeting, all of whom had been notified that a question of live interest was to be considered, and in his characteristic way said:

If there is any place on God's green earth that needs missionary work, gentlemen, it is the city of Chicago. We have garages and garages in this city. I did not think

there was the laxity of business methods in use in this city that I have found during the last few weeks while visiting with the garagemen.

On the north shore there is a deplorable condition, both among the electric and the gas garages. Very few owners of garages in that territory seem to know what they are doing or where they are going to stop. My impression is that some of them are going to stop pretty soon.

The gas people on the north side, or a large proportion of them that I have been in, are garaging all kinds of cars, small or large, for \$10 a month, with one wash a week, and \$12 a month for three washes a week.

The electric garages are getting \$25 to \$35 per car a month. I was in one electric garage that was getting \$40 a month for the cars. It is true these men have none of the benefits of organization. They have never had any education along that line outside of what they have picked up themselves, so they claim to know all about the garage business. I will venture the statement that 99 per cent of them do not know anything about operating a garage from a business standpoint. Not one has a cost system.

## Stop the Leaks.

Switching to the subject of garage operation, Mr. Bland continued:

Pay attention to what your customers tell you. Investigate each claim and you probably will find the customer is right. If he is not right, then you are, and that is worth knowing. If you will stop the

## Dealers Service Station ..FOR TIRE REPAIRS..

**GUARANTEED WORK  
PROMPT SERVICE  
RIGHT PRICES.**

**SPECIAL ATTENTION TO  
GARAGE ORDERS**

**TRIPLE TREAD MFG. CO.**

**1545 Michigan Avenue, Chicago  
Phone Calumet 2456**

## We Grind Cylinders

By specializing, we make ridiculously low prices on regrounding cylinders.

Our prices include new pistons and rings. Work neatly and promptly done and absolutely guaranteed.

*Write for Particulars*

**ALLEN & CURTISS CO.  
MISHAWAKA, IND.**

**Empire Tires**  
**RED** WEAR LONGEST



We believe the dealer must live.

To live he must make a profit.

To make a profit he must have price, quality and service.

Our prices show a legitimate profit to the garage man.

The quality of EMPIRE RED TIRES is supreme. That is why our slogan is "WEAR LONGEST".

EMPIRE TIRES will give service, and it is our aim also to give service.

We do not cater to the consumer, but sell our tires through legitimate dealers.

Why not get our proposition?

**EMPIRE RUBBER & TIRE CO.**  
**1627 Michigan Ave. Chicago, Illinois**

leaks in this way you will improve your service to the point where you will have a waiting list. The price won't count then, but the quality of service will, and you must set a high standard and keep it up.

Garagemen are ruining their business by not giving the kind of service their customers want. It is just as bad to figure the customer is always wrong as to figure that the garageman is always wrong. Find out, know of a certainty, then you can act accordingly.

I have been in garages at 10 to 12 in the morning and the business was being run by a none too competent hiker or floorman. The owner was not there and the employees were vague about when he would be.

#### More Bouquets.

Mr. Farwell, of the Buena Park Garage, outlined his experience in trying to get the boys together and on a working basis and stating it was the toughest proposition he ever had tackled. He also directed attention to some of the low rates now quoted, confirming the statements made by Mr. Bland.

#### Co-operative Effort.

Mr. Reed outlined briefly the method of co-operation that had been devised which provides for the manufacturer supporting the association garages.

J. C. Thorpe, of the National Automobile Trade Association, suggested the advisability of placing a requirement on the garages, or those that are now outside the association and who in the future will seek admission. In line with the discussion he pointed out the necessity of raising the standard of service the garage

gives. He stated that would put a heavy punch in the work being carried on by the Chicago Garage Owners' Association.

Mr. Reed answered that the benefits and recognition to be given the garages would be contingent on the latter subscribing to a standard of service.

#### Where the Shoe Pinches.

Mr. Salvat—I bought a lamp for a Packard car, had to pay cash and did not get a cent off.

Mr. Thorpe explained that was a policy established by the manufacturer and that it would be necessary to take the matter up direct in order to secure redress. A motion was adopted asking the secretary of the National Automobile Trade Association to take this matter up with the National Automobile Chamber of Commerce.

#### Profitable Prices.

Sandwiched in with this talk Mr. Farwell quoted the prices he is securing for a garage full of cars, which follows:

Plain storage .....	\$12.00
Storage and one wash each week..	16.00
Storage and two washes a week....	20.00
Full service .....	25.00

#### The Tire Situation.

The next subject taken up in this round-table discussion was the tire situation, which was shown to be in a condition inimical to the peace, happiness and financial well being of garage owners and the tire companies.

President Halbert reviewed the entire tire situation and outlined the cause of the present unsatisfactory condition in the Chicago tire field, stating manufacturers were gradually working down the margin of profit to dealers and there was a possible 5 to 7½ per cent profit in the business for legitimate dealers, unless something is done. He said a few of the larger tire companies are protecting the dealer.

#### To Standardize List Prices.

Mr. Thorpe called attention to the discrepancies in the jobbers' list prices of standard articles, pointing out that such differences in the list created confusion in the minds of dealers and their customers, many of whom occasionally see such catalogs and seem to imagine that the discounts are the same, regardless of the prices quoted.

Mr. Salvat asked that all standard articles be listed at standard prices. That motion was adopted and the matter is to be taken up with and by the National Automobile Trade Association.

An interesting discussion of this question preceded its adoption.

This organization is working along practical lines on practical questions of daily concern to all garagemen and dealers. It is co-operating with the National Automobile Trade Association and through the influence of the latter is seeking to straighten out some of the trade tangles.

## SAVE MONEY ON TIRES

Many of our patrons say that they have obtained as many as 8,000 miles from our double tread tires.



#### Prices of Our Double Tread Tires

28x3 .....	\$4.00	35x4 .....	\$ 8.00
30x3 .....	4.50	36x4 .....	9.00
30x3½ .....	5.50	34x4½ .....	9.25
31x3½ .....	5.50	35x4½ .....	9.50
32x3½ .....	5.75	36x4½ .....	10.00
34x3½ .....	6.00	37x4½ .....	10.50
31x4 .....	6.50	35x5 .....	10.75
32x4 .....	7.00	36x5 .....	11.00
33x4 .....	7.50	37x5 .....	11.25
34x4 .....	7.75	37x5½ .....	11.50

#### SEND YOUR OLD JUNK TIRES

By our process you will get many more miles of wear from them. PROCESS: One may be rim cut and have a good tread and one that is tread worn, regardless of small blow outs. We cut the rim off the rim cut tires, having the tread which we vulcanize over the tread worn tire. Then we sew them together doubly, which makes them into one tire after which we coat it with a preservative solution which renders it weather proof. Result: One good double treaded tire which will give you 2,500 to 5,000 more miles, for practically 30% of the cost of a new tire.

#### Prices When You Furnish 2 Tires

28x3 .....	\$2.00	35x4 .....	\$3.40
30x3 .....	2.25	36x4 .....	3.50
30x3½ .....	2.50	34x4½ .....	3.00
31x3½ .....	2.60	35x4½ .....	3.70
32x3½ .....	2.70	36x4½ .....	3.80
34x3½ .....	2.80	37x4½ .....	3.90
31x4 .....	3.00	35x5 .....	4.00
32x4 .....	3.10	36x5 .....	4.00
33x4 .....	3.20	37x5 .....	4.00
34x4 .....	3.30	37x5½ .....	4.00

#### Prices When You Send Only 1 Tire

28x3 .....	\$3.00	35x4 .....	\$6.50
30x3 .....	3.50	36x4 .....	6.75
30x3½ .....	3.75	34x4½ .....	6.50
31x3½ .....	4.25	35x4½ .....	7.00
32x3½ .....	4.75	36x4½ .....	7.25
34x3½ .....	5.25	37x4½ .....	7.25
31x4 .....	5.00	35x5 .....	7.50
32x4 .....	5.25	36x5 .....	7.50
33x4 .....	5.75	37x5 .....	7.75
34x4 .....	6.00	37x5½ .....	8.00

A minor charge of 35 cents is made for extra inner shoes where necessary. Send no money with your old tires. Just prepay express. When ordering tires from us send \$1.00 deposit and we will send same to you, balance C. O. D., for your examination.

**CHICAGO DOUBLE TREAD CO.**

1233-37 S. Wabash Avenue

CHICAGO, ILL.



# Edison

Alkaline  
Lighting  
and  
Ignition  
Batteries

**Batteries and Supplies**

carried in Stock at our

## Service Station

Every Garage Owner should have information about the Edison Battery on his desk.

Write us.

**EDISON STORAGE BATTERY CO.**

Orange, N. J.

Chicago Address: 2025 Michigan Avenue

# Progress of Association Work as Reported from Many Sections

## MEMBERSHIP INCREASE IN IOWA.

At a meeting of the board of directors of the Iowa Division of the National Automobile Trade Association the report submitted by the secretary indicated an increase in membership of about 200 since January 1.

Plans were approved to provide Secretary Seaman with an assistant to look after the details of the office work in order to permit him to devote his entire time to increasing the membership throughout the state.

A special effort to organize the state by counties is now being made. The dealers and garage men are organized under a charter granted by the parent association. This work has been extremely successful and local organizations have been completed or soon will be completed in 40 of the 95 counties.

The next meeting of the Iowa directors will be held August 14 in the association offices in Des Moines, at which time further plans for the future of the organization will be entered into.

The Iowa association is publishing a

monthly bulletin called *Iowa Garage Gossip*, which will be incorporated with the National Automobile Trade Association Bulletin beginning with the August issue.

## PRICE HEADS OHIO DIVISION.

Organization work of the Ohio Division of the National Automobile Trade Association has been taken up by F. T. Price, president of the association, with headquarters at Columbus, Ohio, suite 401, Huntington National Bank Building. Mr. Price now has a corps of solicitors in the field and substantial progress is being made in extending the membership.

## DETROIT DOINGS.

DETROIT, MICH., June 21.—At a regular meeting of the Detroit Automobile Trade Association, which is the Detroit division of the Michigan Automobile Trade Association, held at the Wolverine Automobile Club, there was a much larger attendance than at any previous meeting for some time.

There were several important matters to be discussed, as well as the election of a president and member of the board of directors. The board of directors was prevailed upon to accept the resignation

of Mr. J. J. Towers, as president, due to the fact that he could not spare the time to devote to the association work that was necessary. Mr. Towers, however, still remains a member of the board of directors and will continue to serve the association in this capacity.

W. G. Westwood, of the Tire and Auto Service Company, was elected to the board of directors to fill the vacancy caused by the resignation of L. C. Steers, who found it necessary to resign, due to the fact of his secretaryship with the Michigan Automobile Trade Association occupying so much of his time, and having to be out in the state so much on the advancement of the state work.

At the board meeting which immediately followed, W. G. Westwood was also elected president of the Detroit Automobile Trade Association for the balance of the year.

There were two additions. Members appointed on the Gasoline Investigation Committee and the chairman of this committee promised rapid progress in their work from now on.

This association has what we term an

An  
Electric  
Sign



Will  
Keep You  
Busy

## Mr. Garage Owner, They Can't Lose You, If—

you install a compelling trade-attracting Federal Electric Sign on the front of your garage.

You want more business—this is one of the best and cheapest ways to get it. Your Electric Sign is your trade mark. It impresses **your** garage indelibly on the automobile owner. It is the surest, quickest and the most economical means of keeping before the public.

Let us show you how cheaply and how effectively we can carry out your ideas. Address Department E.

**COMMONWEALTH EDISON COMPANY**  
Edison Building, 72 West Adams Street, CHICAGO

Alley-Rat Committee that has been doing some splendid work and when the question came up of increasing the number of members on this committee, it was unanimously adopted to make every member of the association a member of this committee and that each one should be on the lookout for infractions of our city ordinance and report it to the chairman.

There were a lot of other important matters handled and everyone expressed themselves as having attended the best meeting held for some time.

### SAN FRANCISCO ELECTS OFFICERS.

SAN FRANCISCO, CAL., June 22.—Everything with our association is going along nicely. At our last meeting, June 22, we elected officers for the ensuing year, the following being elected:

President—J. B. Kelly, Kelly Ball Bearing Company.

Vice-President—D. S. Cohen, Grand Pacific Garage.

Secretary-Treasurer—A. D'Etzel.

#### Executive Board.

Chairman—Wm. P. Crowley, Auto Service Company.

S. Anderson, Acme Garage.

A. R. Walther, Boulevard Garage.

#### Membership Committee.

Chairman—C. Lyons, Class A Garage.

Mr. Michels, Presidio Heights Garage.

Henry Schroeder, California Garage.

#### Grievance Committee.

M. Francis, St. Francis Garage.

C. Lubbe, St. George Garage.

Mr. Keene, Harding & Keen Garage.

### A Burdensome Ordinance.

Mr. McLaren, one of our supervisors, has introduced an ordinance into the board of supervisors, placing on all who handle gasoline the burden of registering the sale, the number of gallons sold, the hour the sale is made, the make of the car, the name of the owner and the state license number.

It is the belief of Supervisor McLaren that such information will enable the police to trace stolen cars. Our members are somewhat opposed to this ordinance, believing there are too many loop holes and that the thieves can secure all the gasoline they want by giving false information. Our members would be put to a great deal of expense to maintain this information and all to no purpose. Have you had anything of that kind in the east to deal with?

The outing our association had planned has been temporarily postponed.

A. D'ETTEL, Secretary-Treasurer,  
Garage Owners' Protective Association.

### MONROE COUNTY ORGANIZES.

MONROE, MICH., June 28.—A number of garagemen and dealers met at the Park hotel last night for the purpose of forming a local organization and, after discussing the needs of an organization, the meeting was called to order by L. C. Steers, secretary of the Michigan Automobile Trade Association, the Michigan

division of the National Automobile Trade Association. The Monroe County Automobile Trade Association was organized and affiliated under the Michigan Automobile Trade Association.

The following officers were elected to fill the term for the balance of this year:

President—H. B. Hubbell, Hubbell Auto Co.

Vice President—L. C. Miller, Sternberg & Miller.

Secretary—C. J. Clapp, Monroe Garage Co.

Treasurer—Chas McIntyre Bros. Garage.

Directors—F. M. Hausman, Monroe Overland Co.

W. F. Loucke, Carleton, Mich.

H. W. Klockner, Union Garage.

It was unanimously decided to hold the charter open for sixty days, to get every eligible garageman and dealer in Monroe county to join in the movement.

A special invitation will be extended to everyone in the county to attend the next meeting, which will be held July 11 at 8 o'clock sharp at Sternberg & Miller's show room.

C. J. CLAPP, Secretary.

### MARKETING A BY-PRODUCT.

Charlie Chaplin gets over half a million a year for making a fool of himself. Most of us do it for nothing.

## DURING OUR BIG JULY OPENING SALE

We Pay All Express Charges on **BEAR VULCO TIRES**  
—Guaranteed for 5000 Miles, at 1-4 Regular Prices.

**No Punctures—  
No Blowouts—  
No Trouble**

Express charges prepaid by us till July 31st, but send your order in today and get choice selections.

#### Prices of Bear Vulco Tires

Guaranteed for 5000 Miles. Plain Tread or Non-skid.

28x3	.....\$ 5.50	34x4	.....\$11.25
30x3	..... 6.00	35x4	..... 11.75
30x3½	..... 7.50	36x4	..... 12.00
31x3½	..... 8.00	34x4½	..... 12.75
32x3½	..... 9.00	35x4½	..... 13.00
33x3½	..... 10.00	36x4½	..... 13.50
34x3½	..... 10.00	37x4½	..... 14.00
31x4	..... 10.00	38x4½	..... 15.00
32x4	..... 10.50	36x5	..... 15.00
33x4	..... 11.00	37x5	..... 15.75



Bear Tires are twice as thick as ordinary tires—12 plys of fabric between your inner tube and the road. The largest business houses in Chicago and New York use Bear Tires exclusively, as their experts know the saving is more than 60 per cent. We are in a position to handle all orders. So send immediately for Bear Vulco Tires today. Then forget your tires for a long time.

Send \$1.00 deposit for each tire ordered and we will send the tire, balance C. O. D. Or better yet, send in your check, money order or draft for the entire amount and we will ship tire prepaid. You not only save express charges this way, but also 25c for returning C. O. D. collection. We are able to do this, as it does away with all bookkeeping and the necessary money outlay for it. Or, if you have old tires on hand, send them in at once.

**BEAR RUBBER CO. 1309 Michigan Ave., Chicago, Ill.**

**GENESEE COUNTY ORGANIZERS.**

FLINT, MICH. July 15.—A number of dealers and garagemen of Genesee county met at the Bryant hotel in Flint last night for the purpose of forming a local organization of the retail interests of the automobile business. After discussing the needs of an organization, the meeting was called to order by L. C. Steers, secretary of the Michigan division of the National Automobile Trade Association.

The Genesee County Automobile Trade Association was organized and affiliated under the Michigan Automobile Trade Association. The following officers were elected:

Sam Wey, Park Garage, President.

M. Davison, Lunt & Davison, Vice-President.

Otto P. Graff, Ford Sales Co., Secretary.

A. B. Hurd, Hurd Auto Sales Co., Treasurer.

C. H. Bliss, Childs-Bliss Auto Co., Director.

Ralph Knight, Clio, Mich., Director.

H. Woodin, Woodin & Lang, Director.

H. Wetherald, Wetherald & Zimmerman, Director.

It is the purpose of the association to hold the charter open for a few days so as to give every eligible garageman and dealer in Genesee county an opportunity to join the association before closing the charter.

After extending an invitation to the Michigan Automobile Trade Association to hold its annual convention in Flint on October 12 next, the meeting was adjourned to meet on Wednesday night, July the 26.

A special invitation will be extended to everyone connected with the retail automobile industry in the county to meet at this next meeting, which will be held at Cumings Brothers' show-room at 8 o'clock sharp.

**E. V. A. ELECTS OFFICERS.**

At the big meeting of the E. V. A. held at the Metropole hotel June 27, Secretary McCall announced the admission of three new members.

The Ohio Electric Car Company.

Schillo Motor Sales Company.

W. T. Christine, Garage Efficiency.

George B. Foster, chairman, stated it had been the custom to elect officers at the annual meeting which formerly had been held in October. Owing to the change in the fiscal year of the organization such an election would come in the middle of the year, for which reason it had been decided to change the date of election.

The nominating committee reported the following:

George B. Foster, for chairman.

W. F. Bauer, for vice chairman.

Carlyle Fliedner, for secretary.

The report was unanimously adopted.

The chair paid retiring Secretary F. E. McCall a well earned tribute in appreciation of the excellent service rendered for a number of years, saying: "It has been an arduous job and has been well done."

Following the consideration of the relations between the various factions of the electric vehicle industry the chair announced that the matter of the summer outing had not been settled, but was being considered by the E. V. A., the Electric Club and the Jovian League. Announcement of plans will be made in the near future.

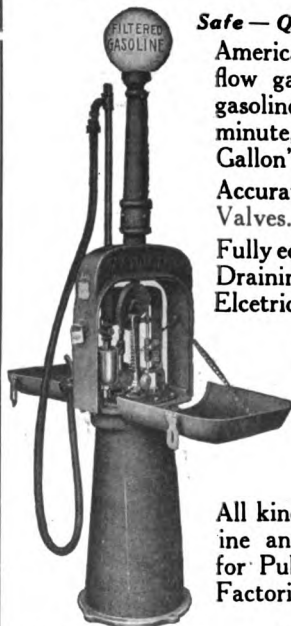
The surprise of the meeting was the announcement by Chairman Foster that the lunch was tendered with the compliments of the Commonwealth Edison Company.

**PROGRESS IN INDIANA.**

A vigorous campaign for membership is being conducted by the National Automobile Trade Association for the Indiana Division. This is a prelude to the first annual convention to be held at the Claypool hotel, Indianapolis, Ind., sometime in September.

Meetings have been held in Crawfordsville, LaFayette, Fort Wayne and Franklin and indications point to an enrollment of at least 250 members when the convention is called to order.

## American Gasoline Filling Outfits



Double-Acting Curb Pump  
(Patented)

**Safe — Quick — Accurate — Economical**  
American Double-acting, Continuous flow gallon measuring Pump delivers gasoline at the rate of 14 gallons per minute, which is as fast as most "Five Gallon" Pumps and costs much less. Accurate Measurement. **ACCESSIBLE Valves.**

Fully equipped with Filter, Meter, Hose Draining Valve. With or without Electric Light Fixture.

Storage Tanks, any capacity desired.

**Portable Wheel Tanks**  
With Double-Acting Pump  
The Best Made

All kinds of Storage Outfits for Gasoline and Oils, Paints, Varnishes, etc., for Public or Private Garages, Stores, Factories, Railroads, etc.

Write for Bulletins, giving complete information, prices, etc.

**The American Oil Pump & Tank Co.**  
CINCINNATI, OHIO

## Money Making Machines for Every Shop

For reboring old worn and scored Ford Cylinders. Enables the small shop to rebore cylinders as well as the largest shops with expensive machinery.

Makes the Ford Motor like new. Reboring Ford Cylinders is a profitable business in any section.

### The Davis Milling Attachment and Compound Table

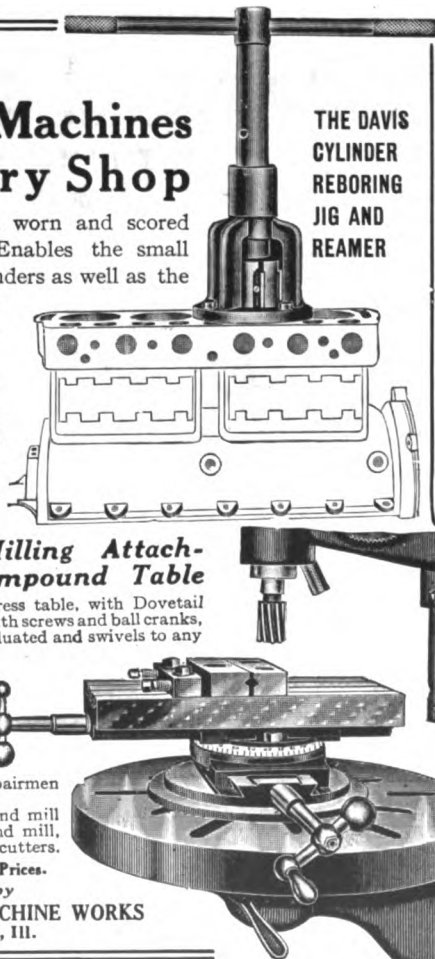
Clamps to any drill press table, with Dovetail Cross Slides, operated with screws and ball cranks, by hand. Saddle is graduated and swivels to any angle. Table is slotted for clamping down work, chuck or vise.

Especially adapted for small shops such as blacksmiths, repairmen and automobile garages.

It will cut key seats and mill cams. For use with end mill, fishtail cutter or formed cutters.

Write for Circulars and Prices.

Manufactured by  
**THE HINCKLEY MACHINE WORKS**  
Hinckley, Ill.



THE DAVIS  
CYLINDER  
REBORING  
JIG AND  
REAMER

Please Mention GARAGE EFFICIENCY, when Writing to Advertisers.



**FORT WAYNE PROGRESS.**

Are associations worth while?

Here is the answer from Fort Wayne, Ind., prepared by the Automobile Trade Association of that city:

Our association has adopted the policy, which became effective June 1, of not taking old cars in trade for new ones. The dealer takes the old car and sells it for his customer's account, if desired. This system prevents the dealer from making an exorbitant allowance for the old car and is fair to the customer. Heavy allowances are another way of cutting prices. Our members, we believe, are satisfied with this arrangement and willing to continue it.

Another matter that has come up is the demand of the automobile manufacturer demanding full list price for parts ordered by dealers and garage men. This is the case where the manufacturer has no agent. Members of this association think the dealer is entitled to compensation for the service rendered and think that if the subject is taken up in the right way the manufacturers would consider a change to their advantage.

FORT WAYNE AUTOMOBILE TRADE ASSOCIATION.

**WELL, HAVE YOU?**

Did you ever ask the secretary or any other officer or member of your associa-

tion to do something for you?

Try it. Give them a chance to make good. If you haven't a real problem,

make up one, but you have some real ones.

Give your mind an airing.

# Accessories

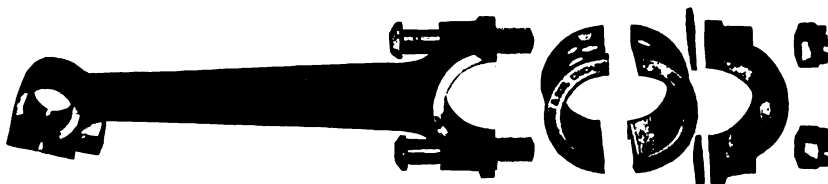
**FORD BEARING AND ROD.**

The Ryerson quick change connecting rod and bearing for Ford motors is now being manufactured so that the Ford owner can secure a connecting rod and bearing of as high a quality as are now used in all of the higher priced cars.

In putting in the regular Ford connecting rod and bearing, it is necessary to practically take down the whole en-

inforcements. Special laminated shims are inserted on either side where the two halves meet. These are composed of metal leaves .002 inches thick. As the bearing gradually wears, these are peeled off so that the bearing will always be as nearly perfect as possible.

The garage man will find it profitable to keep a stock on hand for repair work, since replacements with Ryerson quick



gine. The Ryerson quick change connecting rod and bearing can be inserted in a few moments. When once the Ryerson connecting rod is installed, extra bearing can be kept on hand and inserted as the old ones wear out. The Ryerson bearing, however, is so constructed that it will outwear all bearings of the ordinary type. A very high grade tin base babbitt is used with skeleton re-

change bearings take a minimum of time and make satisfied customers. There is also more money in the Ryerson product than in the ordinary part of this kind.

**HERE'S AN INTERESTING PROPOSITION!**

Fifteen of the leading automobile tire manufacturers have admitted that the methods of tire inflation which they have



**Your Air Compressor Will Work for You as Well as Your Customers.**

Is your compressor idle a good deal of the time? Are you paying for electric current that you are not using? If so, get an air hoist and put your compressor to work. You are paying for the power anyway, so make use of it. There are hundreds of different ways of using an air hoist. It costs no more than a slow chain block and needs only one man to operate it. Your customers will patronize the garage that is equipped to do good work, and do it quick, and will pass the word on to their friends.

Let us quote you and give you information as to how an air hoist will pay you in your garage.

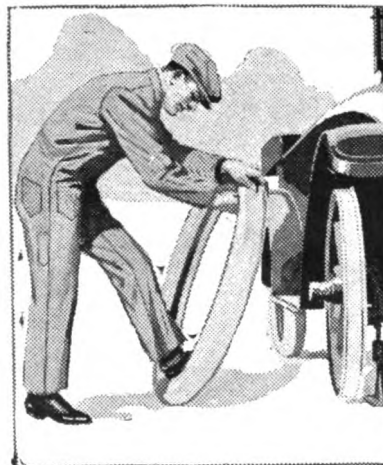
**CURTIS PNEUMATIC MACHINERY CO.**  
1597 Keimlen Ave.,  
ST. LOUIS, U. S. A.  
530C Hudson Term., N. Y.



## Clothes Safe from Grease and Dust

No need now to ruin your clothes with odd jobs on your motor car. Protect your clothes — from head to foot — with a

**Shanhouse**  
MOTOR SUIT



One-piece over-garment for every use.

Put it on in a minute. Take it off in a second. Keep it always in your tool box, handy for instant use. Made of olive khaki to go on over all your clothes — comfortable, durable, practical and washable. Costs but \$2.

Don't change your clothes every time you change your tires, clean or grease your car. Save big bills at the cleaners.

If your dealer cannot supply you, send \$2.00 giving chest measure and dealer's name. We will send you one direct, prepaid. Money back if not satisfied. (5)

**W. SHANHOUSE & SONS**  
Dept. 105  
ROCKFORD, ILL.

Please Mention GARAGE EFFICIENCY, when Writing to Advertisers.

775807

advised motorists to use in the past are wrong.

Tires should be inflated for the load they carry and not to an arbitrary pressure determined by the cross sectional size of the tire. In other words, the manufacturers say that it is foolish to pump up a 4-inch tire which equips a light roadster to the same pressure that a 4-inch tire must carry which equips a seven-passenger touring car.

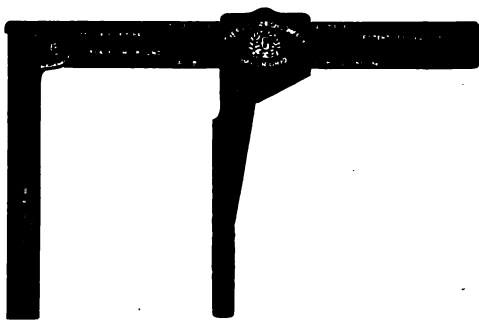
Heretofore practically all tire manufacturers have advised an arbitrary inflation schedule based upon twenty pounds pressure for every cross sectional inch of the tire. That is to say, a 3-inch tire carries sixty pounds pressure, 4-inch tire eighty pounds pressure, and so forth.

This recent announcement shows that it is impractical for the car owner to follow either such an arbitrary inflation schedule or the pressure recommendation molded on the side of every tire.

"What's the poor car owner to do," you say and well you may.

Only one company, The B. F. Goodrich Company, has really done anything to help the car owner out of his predicament. This company placed upon the market a year ago an instrument known as the "Goodrich Tire Caliper." Instead of gauging the pounds of pressure in the tire, the caliper measures the deflection or flattening of the tire at the point where it rests upon the ground.

Excessive deflection or flattening oc-



curs when tires are overloaded or under-inflated, and it is the theory behind the Goodrich Tire Caliper that the prevention of excessive flattening can best be secured by measuring the outside of the tire than by trying to regulate the number of pounds pressure to which the tire is inflated.

One of the chief advantages of the Goodrich Tire Caliper is its mathematical accuracy, insuring proper inflation for any tire under all conditions of load and temperature—a decided contrast to the uncertain spring gauge upon which motorists have relied heretofore.

It is interesting to note that every Pierce-Arrow car is fitted with a Goodrich Tire Caliper as part of the original equipment, and the Nordyke-Marmon Company advise the use of it in their instruction book to motorists.

## AN ALL-WEATHER CONVERTIBLE TOP.

The Adams-Williams Manufacturing Corporation, 1790 Broadway, New York City, is producing an all-weather convertible top that affords motorists of moderate means with a construction that is adapted to spring, summer, fall and winter service and without the cost and maintenance of two distinct types of bodies. It adds but 30 pounds to the car and one of the features is that when the glass



panels are removed it cannot be told from a conventional one-man top. In pleasant weather the panels can be removed and stored in a leather compartment in back

of the front seat, where they are out of the way and easily accessible.

It is stated that the top can be converted from the open touring into a fully glass enclosed in two minutes. French plate glass is used and is inserted in a steel frame having lugs that fit recesses in the moulding. The panels are rigidly retained by a concealed spring operated by the fingers, and the doors can be slammed as usual without danger of injury to the glass. The door panels are practically a part of the door, incline slightly inward, and when closed are perfectly tight. As the top provides for a partially or wholly enclosed body, it is an advantage in cool weather as well as winter.

It is guaranteed rain, snow, dust and windproof as well as free from rattles, squeaks or vibratory noises. A separate design is made for each standard model of car and the lines harmonize perfectly with the body. The first cost is the only cost and there is no varnish to require careful washing. The price varies according to the size and type of car.

## That Item of Rent

You pay rent for the premises you occupy, and usually it is paid in advance. If you own the place then you do, or do not, derive an income from your investment, depending on whether or not you charge your business for occupancy. In the end you must pay for the use of the building in which your business is housed. There is no escape.

In return for your rent you secure the use of so many hundred square feet of floor space. A part of that is used for storage, a part for your repair shop, a part for washroom and a part for office and store. It is an easy matter to figure it out on a percentage basis.

If you care to go into details of costs and cost accounting you must charge each department with its share of overhead. These charges should be adjusted on a practical basis. Rent, for example, may be charged according to the floor space used by each department, managers' salaries and clerical hire according to the total value of the business transacted by each department, and taxes, insurance and miscellany on the same basis.

The big thing is to get the costs

in, to show the gross, the tare and the net receipts. Then your inquiring mind will ask if a certain department is making money, and perhaps it will be necessary for you to consider the work of each department more minutely to determine that fact.

Rent is one item of expense. Usually it is the heaviest item. It is important that it be sanely distributed. It is just as important that other items of cost be taken into account.

Take the item of rent. Say you pay \$200 a month for a building in which you can garage 40 cars. Other items chargeable to "cost of space" are water, light and heat. If these items average \$50 a month, then your cost of such items totals \$250 a month, or \$6.25 a car.

That is the net cost of the space the car occupies and does not include anything for attendance, management, clerical hire and other fixed charges which must be met each month.

Get a soft pencil and a sheet of paper and figure this out for yourself. The outcome will be more convincing than anything we can tell you about the subject.



**Big Money Double Treading**

Lots of Work. Vulcanized Double Treads wear better, look better. This Vanderpool Vulcanizer does double treading and repairs all size case and tubes from 3 to 5-inch.

Vulcanizers \$25 up.

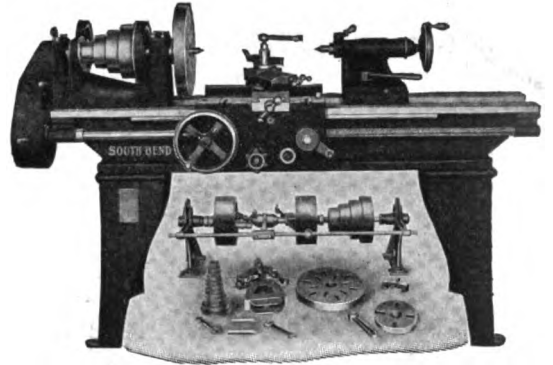
**VANDERPOOL CO., Springfield, Ohio**  
and 1044 S. Main Street, Los Angeles, Cal.

## KENNEDY Auto Storage Covers

furnish efficient protection for cars in dead storage. They are made of strong, heavy paper, properly reinforced, and in standard sizes to fit any car.

Made only by

**The Kennedy Car Liner & Bag Co.**  
SHELBYVILLE, IND.

**SOUTH BEND LATHES**

Regular Equipment, as Illustrated Under Lathe, is Included in Price.

The practical Lathe for the Machine and Repair Shop.

13-Inch Lathe, Complete,	\$185.00
14 " " "	209.00
15 " " "	230.00
16 " " "	294.00
18 " " "	354.00

Straight and Gap Bed Lathes

Send for free catalog giving prices on the entire line.

### HOW TO RUN A LATHE

REVISED EDITION NO. 15. PRICE 10 CENTS  
CONTAINS OVER 100 ILLUSTRATIONS AND 300 SHOP KINKS  
10 Cents Postpaid—Coin or Stamps Accepted

**SOUTH BEND LATHE WORKS**  
510 E. Madison St. South Bend, Ind.

# Accountants—Auditors—Systematizers

We are making a specialty of Garage Accounting Systems. We are prepared to make audits, to undertake investigations to prepare statements, to devise and install the kind of accounting system you require.

## Our Terms Are Reasonable

We can maintain books at a cost to you of \$10 to \$25 per month. All dealings held in strictest confidence by capable and trustworthy, expert accountants.

Investigate, then let us quote you prices.

## Standard Audit Company

(Not Inc.)

608 So. Dearborn St.

Room 372

Chicago, Illinois

Please Mention GARAGE EFFICIENCY, when Writing to Advertisers.

# Modern Garage Service

**W**HETHER it be an electric or gas garage nowadays, many things are expected by customers that were not thought of a few years ago. Garage operators have been compelled to assume obligations and liabilities in the handling and delivering of cars to customers they never dreamed of. For instance, hikers were only for electricians just a short while back, now gas garages use them to hold their trade. We know hikers have accidents causing sometimes severe losses to the garage owner.

Our **ILLINOIS GARAGE OWNERS' POLICY** completely covers the needs of the garage owner, even with a livery in connection. It is but one policy but it covers **NINE** hazards.

*Write us for further information.*

## **AMERICAN AUTOMOBILE INSURANCE COMPANY**

**HARRY M. McCONNELL, General Agent**

**516 National Life Bldg.**

**Chicago, Illinois**

### **HERE'S A BOOK YOU NEED**

A complete Ford Instruction is also added.

Read the subjects treated below and bear in mind each and every subject is fully treated in a simplified manner with clear illustrations.

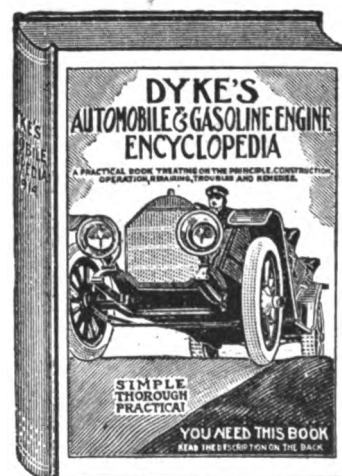
Step by step the book takes you through construction engines; 4, 6, 8 and 12 cylinder, carburetion; valve timing, ignition timing, and all up-to-date electric systems—repairing, adjusting, etc. The repair subject is very complete and extremely useful. Hundreds of illustrations on this subject alone.

This book is compiled by A. L. Dyke, the man who invented the first auto supply business, manufactured the first valve feed carburetor, and published the first practical book on automobiles in America.

The book is endorsed by Elwood Haynes, Charles Duryea, Lord Montagu (founder of boulevards in London), Barney Oldfield and other notables. It is read by the faculty of five Automobile Schools.

#### **READ THE BRIEF TABLE OF CONTENTS BELOW**

- |   |  |  |  |  |
|---|--|--|--|--|
| (1)—The Automobile.                     | (11)—Six, Eight and Twelve Cylinder Engines. | (20)—A Review of Various Ignition Systems.             | (29)—Care of Electric Starting and Generating Systems. | (40)—Horse Power.  |
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| (5)—Clutches.                           | (15)—Lubrication.                            | (24)—Ignition Timing.                                  | (33)—Electric Vehicles.                                | (44)—The Automobile Repairman.                                     |
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|   |  |  | (39)—The Automobile Salesman.                          | (49a)—Ford Instruction.  |



**Free Supplement** — with each encyclopedia (after Feb. 15, 1916)—144 pages, part in two colors, treating on the principle, construction, care and adjustment of Packard Twin Six, King Eight, Willys-Knight, Maxwell and Ford.

**Price \$3.00** (Add 25 cents if wanted prepaid)

**SPECIAL** This book, prepaid, and one year's subscription will be given for \$3.50.

If you are already a subscriber, then give the subscription to a friend and get the book.

Address Book Department, Garage Press, Transportation Building, 608 So. Dearborn Street, Chicago, Ill.

Please Mention **GARAGE EFFICIENCY**, when Writing to Advertisers.

## JUST PUBLISHED

and you need it—the most frequently needed and by far the most useful book on automobiles ever written.



### *Automobile Repairing Made Easy*

By Victor W. Page, M. E., member of the society of Automobile Engineers, Author of the "Modern Gasoline Automobile," etc.

Here are one thousand and fifty-six pages of valuable information, one thousand specially made engravings on five hundred plates, including ten folding plates.

This book is a comprehensive, practical exposition of every phase of modern automobile repairing practice.

The only book of its kind, and it fills the bill.

You will find it outlines every process incidental to motor car restoration. A very definite and accurate idea of plans for workshop construction, suggestions for equipment, the power needed and the machinery and tools necessary to carry on the business successfully. It tells how to overhaul and repair all parts of all automobiles.

This book also contains special instructions on electric starting, lighting and ignition systems; tire repairing and rebuilding; autogenous welding, brazing and soldering; heat treatment of steel; latest timing practice; eight and twelve cylinder motors.

It is a reliable guide to mechanical efficiency for all repair men. You will never get stuck on a job if you have this book. A complete index makes for easy reference.

**SPECIAL**—Readers of Garage Efficiency are given first chance at this book of books. The **Price is \$3—net**. Shipment will be made by express, **charges collect**—or—send us \$4 and we will **send prepaid** and include a year's subscription to Garage Efficiency.

Send that order today while the impulse is warm.

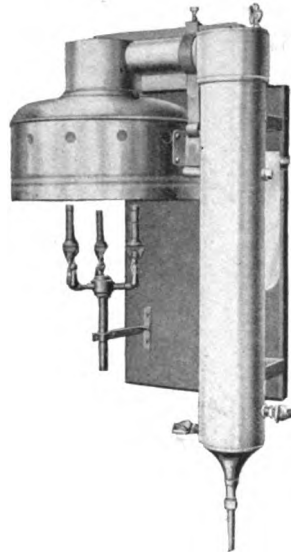
BOOK DEPARTMENT

## THE GARAGE PRESS

608 South Dearborn Street

CHICAGO, ILLINOIS

## BATTERY EFFICIENCY DEMANDS PURE WATER



*Use Only Pure  
Distilled Water*

**IN YOUR STORAGE  
BATTERIES**

Pure Water Helps  
Your Batteries

Impure Water  
Injures Them.

The cost of producing one gallon of distilled water varies from 1-10c to 2c, according to the kind and price of fuel used.

Produce distilled water for your own needs, also for sale at a splendid profit to garages, gas and electric car owners, druggists, hospitals, physicians, chemists, and other users of distilled water.

Your profit from the sale of distilled water will quickly pay for the Still.

### CAPACITIES:

1/2 to 15 gallons per hour

Operated by Gas, Gasoline, Kerosene or Steam  
Our kerosene and gasoline burners are powerful, wickless, noiseless and odorless.

The Still is entirely automatic in its operation, and as simple to operate as a teakettle. No parts to wear out. It will last for years and give perfect service.

No. 1 Gas Operated capacity 1/2 gallon distilled water per hour  
No. 2 Gas Operated capacity 1 gallon distilled water per hour  
No. 3 Gas Operated capacity 2 gallons distilled water per hour

*Prices on These and Other Types and Sizes  
on Application*

## THE IMPROVED "ROCHLITZ" AUTOMATIC WATER STILL

Is Recommended and used by the following storage battery manufacturers:

EDISON STORAGE BATTERY CO.  
GOULD STORAGE BATTERY CO.  
WILLARD STORAGE BATTERY CO.  
THE ELECTRIC STORAGE BATTERY CO.  
THE REX STORAGE BATTERY CO.  
U. S. LIGHT & HEAT CORPORATION "U.S.L."

**Be Sure About Your Drinking Water  
Don't Guess!**

**PURE WATER PROLONGS YOUR LIFE**

MANUFACTURED BY

## W. M. LALOR

Manhattan Bldg.

Chicago, Ill., U. S. A.

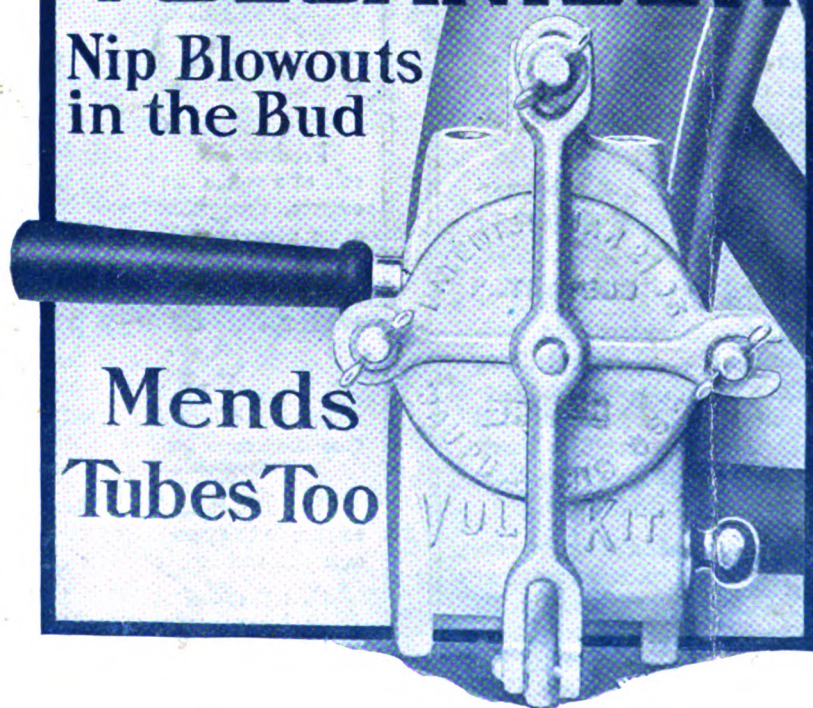
SAVE TWO THIRDS  
YOUR TIRE EXPENSE

WITH A

# SHALER VULCANIZER

Nip Blowouts  
in the Bud

Mends  
Tubes Too



This metal display stand for your counter or window places a sample vulcanizer in full view of every customer in a novel way that is sure to attract and hold attention. It shows a regular stock size Vul-Kit or Ford-Kit apparently mending a tread cut in a fully inflated tire.

**Put This on Your Counter or in Your Window**  
*It Will Make Many Sales For You*

**Complete  
Stand  
FREE  
to Dealers.**

*Ask for it today*

Here is a splendid way to increase your sales and profits on this popular accessory. The Shaler Tire Repair Kit is needed by every motorist to carry in his tool box to eliminate tire trouble on the road and double his mileage. And the motorist must buy it from his dealer because no car comes equipped with a tire-saving device.

Put this attractive display stand on your counter or in your window and let your customers know that you handle this popular accessory. They will buy their own from you and send their friends to you also.

**Complete Catalog Mailed on Request.**

**C. A. SHALER CO., 356 Fourth St., Waupun, Wis.**

**Oldest and Largest Vulcanizer Manufacturers**



Continued as American Garage & Outfit

# RETAIL MOTOR TRADE JOURNAL

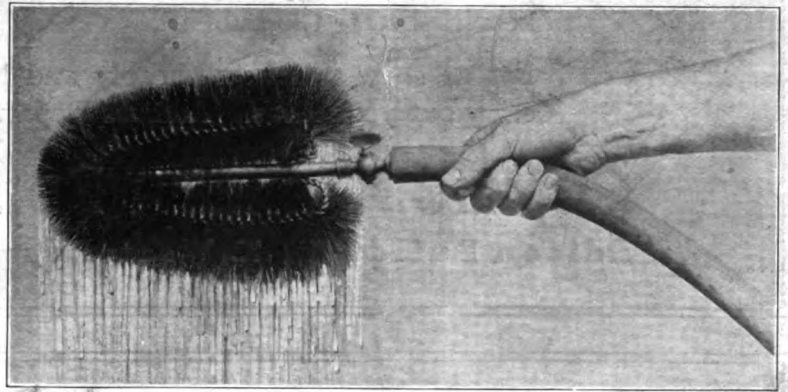
VOL. VII

CHICAGO, AUGUST, 1916

No. 2

## Good-Bye Sponges!

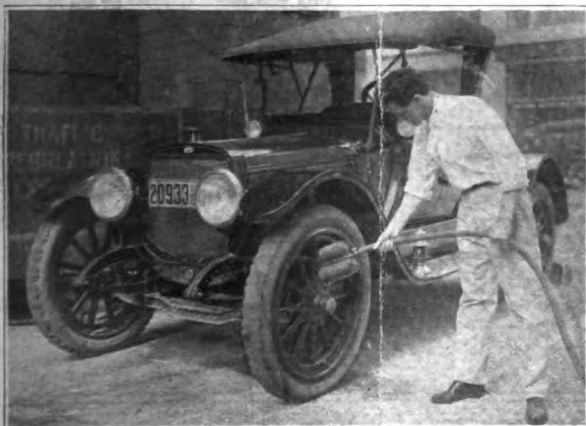
Those antique, sloppy, expensive sponges never did do the work efficiently, anyway. Outlasts 10 lbs. of sponges.



You can now use the wonderful

## U-Auto-Washer

It combines every needed feature for thorough automobile washing. It's an automatic water brush that cleans and rinses at the same time. It will clean in places too small to use a sponge, and will not scratch or mar a high polish.



**The "U-AUTO-WASHER"**  
saves Time, Money and Backache

**Retails at \$3.00**

*Write for our Special Dealer's Prices*

**U-AUTO-WASHER CO.**  
1219-21 Marquette Building CHICAGO

An  
Electric  
Sign



Will  
Keep You  
Busy

## Mr. Garage Owner, They Can't Lose You, If—

you install a compelling trade-attracting Federal Electric Sign on the front of your garage.

You want more business—this is one of the best and cheapest ways to get it. Your Electric Sign is your trade mark. It impresses **your** garage indelibly on the automobile owner. It is the surest, quickest and the most economical means of keeping before the public.

Let us show you how cheaply and how effectively we can carry out your ideas. Address Department E.

## COMMONWEALTH EDISON COMPANY

Edison Building, 72 West Adams Street, CHICAGO

769

## How the Texas Tube test happened!

**I**T nettled Bill Parr considerably! So many Motorists had carelessly stated that "all Tire Tubes are just Rubber."

He determined to show some folks the *difference*, in a way they would never forget.

There were four Cars at the door, and their Owners or Drivers at his elbow.

To these he said,—

"Boys,—how *strong* do you think this Goodrich Brown Tube *actually* is?"

"Do you believe it is strong enough to tow Mr. Oden's five passenger Car, with four people in it, for 20 blocks?"

"You don't, eh?"

"Well now here's a bit of a Bet I want to make with any or all of you."

"I will bet you a Dinner that this little old regular Goodrich Tube (34x4) will not only tow Mr. Oden's Car, but will tow *all three of your Cars*,—fully passengered,—through the streets, for the full 21 blocks (more than a mile and a half)—starting and stopping as many times as the crowd makes it necessary."

"I will,—if you Gentlemen are agreeable,—line up all four of yours Cars, right here and now, take three regular Goodrich Tubes hap-hazard out of their boxes,—tie one tube between each two Cars, (which means hauling three Cars on the *first* Tube) and tote You-all that way to 'The Corners.'"

"Are you willing to bet a Dinner that any one of the three Tubes will go broke on the way, or show a flaw which would leak Air, or prevent its being used for its original Tire purpose afterwards?"

"You are, eh?"

"Well,—the Bet's on!"

"Come along, and *you* be the Judges."

**GOODRICH** "Texas—  
—Test"

**INNER-TUBES TIRES**

**T**HE Dinner was a very Cheerful Affair.

As Oden said afterwards (when putting up his share of the Bet) "you could have bet me a Million on that, Parr, and I'd have taken you up,—even if I had to *borrow* the Million."

"I don't see how the blamed Tubes ever *did* hold out,—especially going up Saco St. under such a strain."

"With eight people in the last three Cars,—and a total load of over 8,800 pounds I sure thought to hear *something* snap before the Second Block."

"Whaddye put *into* that brown Goodrich Rubber anyhow, to make it *hang together* like that?"

Fritz said that what puzzled him most was the brown Rubber Tubes "not being all *stretched out of shape* after such a tug, even if they *did* hang together at the finish."

"Look you, said he, "when we released the load,—after the Haul,—they instantly snapped back into just three-quarters of an inch longer than they were at the start!"

"And that  $\frac{3}{4}$  of an inch, they *took up* again in less than two hours rest."

"**W**ELL, boys,"—Bill Parr remarked,—as he smoothed out a wrinkle in his well-filled vest, "that'll stop the Argument about *all* Tire Tubes being 'just Rubber,' won't it?"

"If the Brown Stuff that toted all you Heavy-weights,—and your Cars,—for 21 blocks, without a Sign of Heavy Duty afterwards, isn't something *MORE* than 'Just Rubber,' like other Tubes,—then you'd better buy the 'Just Rubber' kind hereafter."

"I'm going to ask *all* of you to sign your names to this 'Texas Tire Tube Test,'—just to show that you have taken part in a *regular* Exploit which is mighty well *worth* recording."

So indeed they did,—and here is the affidavit:

**AFFIDAVIT**  
This certifies that we, the undersigned, took part in and witnessed, the Texas tube test referred to in the advertisement entitled "How the Texas Tube Test Happened!"—that the test was made on date of Nov. 11, at Waco, Texas, the distance covered being twenty-one blocks and that the result was as described.  
Signed— W. M. ODEN, J. M. NASH, B. A. FRITZ, W. A. PARR.  
Subscribed and sworn to before me by W. M. Oden, J. M. Nash, B. A. Fritz and W. A. Parr, this 3rd day of May, A. D. 1916, at Waco, Texas.  
Signed— J. G. WREN, Notary Public, McLennan County, Texas.

Now what *think* You of these GOODRICH Tire Tubes that could *bear up* under such a gruelling test?

Reflect that they *cost* you no more than the "ordinary" Tubes you so carelessly accept!

# Retail Motor Trade Journal

AUGUST, 1916

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## The Motor is as Efficient as its Piston Rings--No More

It may have been built after the latest and most approved designs. The greatest care and most skillful mechanics may have been employed. The costliest materials may have been used. But if it is equipped with common, leaking Piston Rings you can safely discount its performance, its life and its possible minimum up-keep at least 25 per cent.

There's not an American make of automobile of any note but what has been equipped with

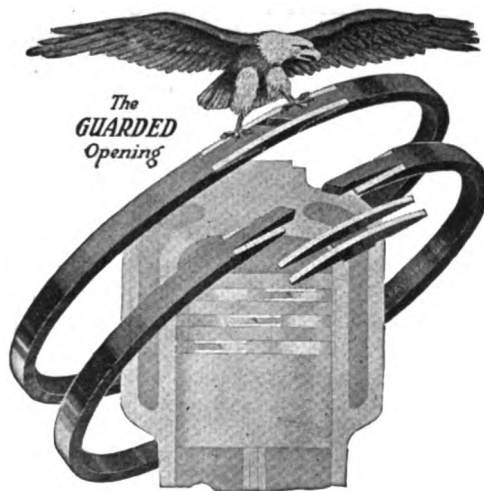
## Burd High Compression Piston Rings

either as Standard Factory parts, in service station replacements or in private repair. And every car so equipped is a better, more economical car because of its Burd Rings. Properly installed, Burd Rings are warranted to produce higher compression and more power with less fuel and oil than any other piston ring made. That's not a claim, mind you, but an absolute warranty legally obligating us to return your money if the rings fail to make good. We know of no other piston ring manufacturer willing to back his product to the same extent. Ask us for the evidence.

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Rockford, Illinois

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# Directory of Garage and Motor Trade Organizations

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**Kalamazoo Automobile Trade Association**—President, E. P. Sumption, Kalamazoo, Mich.; vice-president, Harry Scott, Kalamazoo, Mich.; secretary, W. H. Wood- en, 1328 Portage St., Kalamazoo, Mich.; treasurer, H. L. Triestram, Kalamazoo, Mich.

**Detroit Automobile Trade Association**—President F. A. Bean, Grosse Pointe, Mich.; secretary, Glen L. Orr, 2128 Woodward Ave., Detroit, Mich.

**Monroe County Automobile Trade Association**—President, H. B. Hubbell, Hubbell Auto Co.; vice-president, L. C. Miller, Sternberg & Miller; secretary, C. J. Clapp, Monroe Garage Co.; treasurer, Chas. McIntyre Bros. Garage, Monroe, Mich.

**Genesee County Automobile Trade Association**—President, Sam Wey, Park Garage; vice-president, M. Davison, Lunt & Davison; secretary, Otto P. Graft, Ford Sales Co.; treasurer, A. B. Hurd, Hurd Auto Sales Co., Flint, Mich.

### OHIO.

**Ohio Automobile Trade Association**—President, F. T. Price, Chamber of Commerce Bldg., Columbus, O.; vice-president, E. T. Jones, Akron, O.; secretary-treasurer, A. J. Peebles, Columbus, O.

**American Highway Association**, Colorado Bldg., Washington, D. C.—President, F. Harrison; vice president, L. W. Page; secretary, I. S. Pennypacker; treasurer, John Burke.

**Lehigh Valley Automobile Trade Association**—President, Geo. W. Hunsicker; vice-president, A. J. Meyers; secretary, E. T. Satchell, Allentown, Pa.; treasurer, Walter Wink.

**Crawford County Automobile Trades Association**—President, H. A. Paxton; vice-president, E. T. Rayl; secretary-treasurer, E. R. Lewis, Bucyrus, O.

**Columbus Garage Owners' Association**—President, F. T. Price, Chamber of Commerce Bldg., Columbus, O.; secretary, J. L. Steele, 248 N. 4th St., Columbus, O.

### ILLINOIS.

**Chicago Garage Owners' Association**—President, H. E. Halbert, 606 Independence Blvd., Chicago, Ill.; vice president, R. C. McPherson, 4551 Kenmore Ave., Chicago, Ill.; treasurer, B. F. Campbell, 1146 E. 47th St., Chicago, Ill.; secretary, Harry Salvat, 740 E. 51st St., Chicago, Ill.

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### IOWA.

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### CALIFORNIA.

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### MINNESOTA.

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**Iowa Automobile Business Association**—President, J. C. Bernhard, 506 7th St., Des Moines, Ia.; vice president, H. C. Carr, 413 12th St., Des Moines, Ia.; secretary, N. T. Miller, 409 Observatory Bldg., Des Moines, Ia.; treasurer, A. R. Rockwell, 108 10th St., Des Moines, Ia.

**United Garage Associations of New York State, Inc.**—President, Wm. Haradon, New York City; vice-president, Jno. Van Ben- schoten, Poughkeepsie, N. Y.; treasurer, Edward W. Leahy, Albany, N. Y.; secretary, Geo. F. Kaiser, 52 Broadway, New York.

**Washington Motor Trades Association**, 205 White Bldg., Seattle, Wash.—President, W. S. Pearne; vice-president, Newton Foster; secretary-treasurer, J. W. Johnson.

**Oregon State Dealers, Garage & Repairmen's Association**—Secretary, W. F. McKenney, 55 First St., Portland, Ore.

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**California Automobile Industries Association**—President, L. F. Parnell, 336 N. Eldorado St., Stockton, Cal.; secretary, R. W. Martland, 1775 Broadway, Oakland, Cal.

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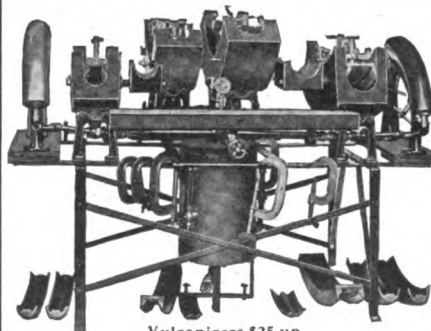
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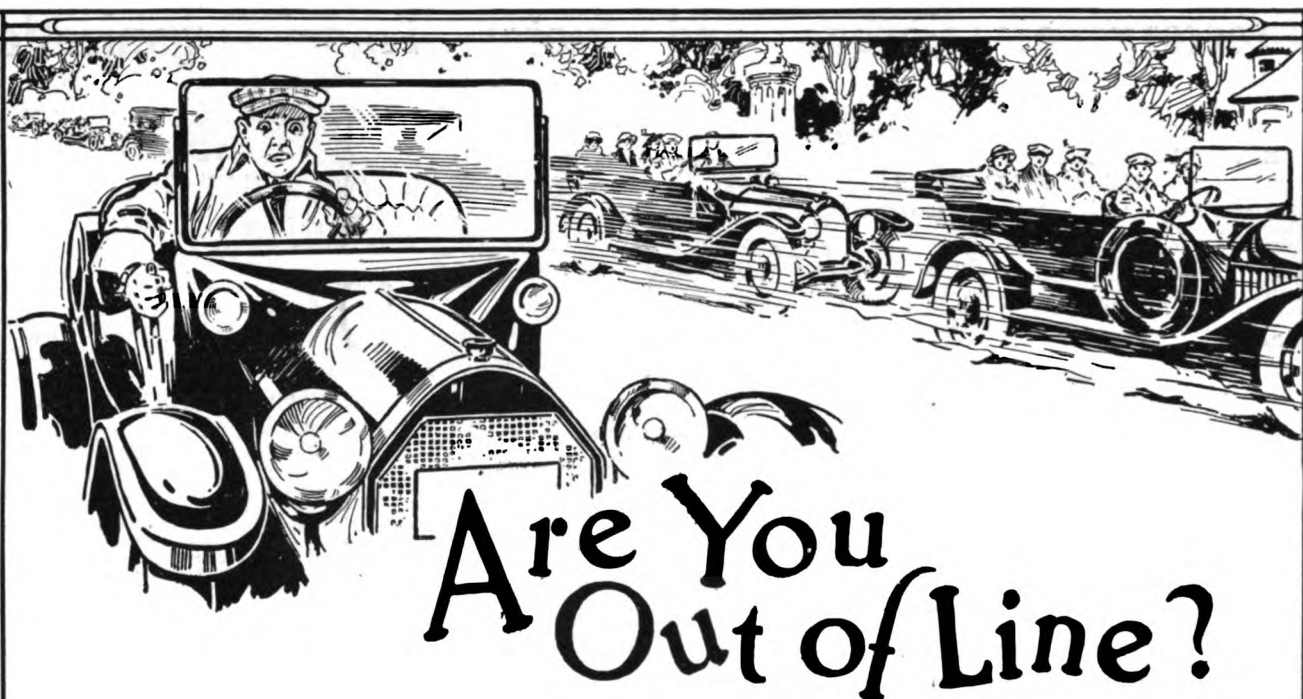
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25a

# RETAIL MOTOR TRADE JOURNAL

Volume VII.

CHICAGO, AUGUST, 1916.

Number 2.

Retail MOTOR TRADE Journal,  
Published Monthly by  
THE AUTOMOBILE TRADE PRESS,  
208 South La Salle Street, Chicago, Ill.  
Suite 1942 Continental & Commercial Bank  
Building.

This exponent of co-operation is devoted to safeguarding the interests of the retail automobile trade, garage owner, car dealer, repair man and all who handle supplies and accessories at retail.

#### OWNERSHIP.

The publication is jointly owned by the National Automobile Trade Association, other retail automobile trade and garage owners' organizations, men engaged in the business, and the editor and manager.

Entered as second-class matter March 20, 1915, at the Post Office, at Chicago, Ill., under the act of March 3, 1879.

#### GARAGE EFFICIENCY,

the predecessor of this publication and now incorporated with it, was launched in September, 1913, by the Chicago Garages Owners' Association, thus making the RETAIL MOTOR TRADE JOURNAL the oldest and the original association publication in the retail automobile field.

#### Subscription Price, Postage Prepaid:

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Other Countries in Postal Union.....	1.50
Single Copies .....	.10

Unless otherwise specified, subscriptions will begin with the number following date on which subscription is received.

Advertising rates furnished on application.

#### YOUR HOBBY.

Most business men have a hobby, and in rare instances it is the hobby of business.

Some men become interested in their commercial affairs in other ways than the financial return received from it.

The business institution they rear is a monument to their enterprise and industry.

Under their magical touch the commercial venture loses much of its sordidness. It becomes a living

entity, lightened with the leaven of the spirit of true progress.

That is another way of saying that business becomes the hobby of certain men. It does not degenerate into a dreary grind, a ceaseless round of duties gracelessly performed, or a thankless effort grudgingly put forth.

To the man interested in the betterment of business no sacrifice is too great, no task too heavy, no obstacle too serious.

That is merely a way of saying that men do those things in which they have a personal interest. If you, the reader of this preachment, became interested in organization work, you would not count the time consumed nor the cost in money. You would sacrifice both cheerfully and for both you would receive full value.

If organization work does not appeal to you, then you must belong to that class that is interested in playing and engaged in business largely for the purpose of "grabbing off" enough to enable its members to continue at play.

In time you will become tired of play or your ability to enjoy play will have been exhausted. And then! Then comes that dull, uninteresting after period of life when you will be a source of small satisfaction to yourself or anyone else.

Business is not a game. It is a part of life and living. You are harnessed to your business the greater part of your waking hours. Disregarding the financial end of it, are you deriving any particular satisfaction from your work?

Working for improvement of your local industry, building up a local organization that will mesh properly with state and national associations, is a hobby that is worth while for any live citizen of the United States.

It is worthy of your attention. Are you giving it?

#### GETTING THE BUSINESS.

What a wonderful lot of business there is in the world and what a wonderful lot of people there are grabbing for it.

It is not altogether a question of ability to serve. With that must be coupled ability of another sort, that of attracting attention and holding trade.

Chinamen are good traders. Three restaurants in a western town occupied adjoining premises. One put out the sign: "OPEN ALL NIGHT." This was followed by the man at the opposite end of the row with a sign: "WE NEVER CLOSE."

The Chinaman thought a while and then hung out his sign, which read: "ME WAKEE, TOO."

In the stress of modern competition a business will not build itself. It is essential that the dealer have something worth while to sell, and just as essential that a selling method be devised and put into effect.

Two dealers are selling cars of equal merit for substantially the same price; two garagemen are offering storage and service at the same rates to the same car owners. Under such circumstances the concern that puts forth the proper sales

effort secured a lion's share of the business.

Trade does not "just come." It must be coaxed, cajoled, enticed, attracted, and once secured it must be retained by considerate treatment and adequate returns in the form of goods or service for the money received.

Just how these stunts are to be performed is for each dealer and garageman to ascertain by patient and expensive investigation. If anyone or everyone could attract and hold trade it would be a very easy thing to do and the accomplishment would be worth little or nothing.

In the face of the known fact that it is difficult to build up a business, the work can be accomplished by anyone who will devote the necessary time and thought to it. The only secret is the secret of courtesy, thought and hard work.

Members of the retail automobile trade could be of material assistance to each other by interchanging experiences and methods. The initiative of a few men who will give outlines of their own methods and ask for the methods of other dealers in exchange would set in motion ways and means of "Getting the Business" that will revolutionize the retail automobile trade.

### LOCAL DISTRIBUTION.

One bad apple may spoil all the apples in the bin, more's the pity.

In hundreds of cases the temperature under the collar of the dealer is rising at an alarming rate.

In a few score instances he is planning to get even in some way. He does not fancy being treated as a pawn, as one dealer puts it.

Dealers who heretofore have been content to build their energies toward building up a demand for one car, and who have devoted their attention exclusively to the promotion of the use of that car, are beginning to take an interest in other cars.

They claim they are being driven to this as the result of the operation of nature's first law—self-preservation.

Many dealers are handling two classes of automobiles successfully,

but merchandising sense is needed to make a go of it.

From two there have been advances to three and even four makes, and in some instances the cars handled are of substantially the same class.

Can one dealer do selling justice to three or more cars?

When the manufacturer has cars to ship he thinks the dealer should sell more of them; when he is over-sold he thinks the trade should be satisfied with a smaller number of cars.

Therefore, an arrangement that would be satisfactory to the dealer or the manufacturer under certain conditions of trade probably would be unsatisfactory with the demand reversed.

Dealers discover ultimately that three parties are vitally interested in his business. These are: Him-

self, the public and the manufacturer.

One is as important as the other and all are necessary, but the dealer's chief concern is to look out for Number One.

For that reason he does not want to do anything that will adversely affect the interests of others or jeopardize his own welfare.

For selfish reasons he does not care to reinvest his money, to build up an efficient sales organization, to increase his overhead, in the face of the possibility of suddenly having his agency taken away from him.

He is pledged to look after his own affairs, and that pledge demands that he take such precautions as will insure the permanency of his business.

The great question is: How many cars can he handle profitably and to the satisfaction of all concerned?

---

### YOUR PERSONAL BRAND.

A Chicago garageman has a die and with it stamps every car that comes into the garage for repairs.

This stamp is placed on a hidden part of the chassis and its location is known only to the garageman.

This is a means of identification that might, with satisfaction, be adopted by all repair shops. This means of identification may be of very great value to the repairman and the car owner.

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### HOW TO ORDER PISTON RINGS.

ST. LOUIS, Mo., Aug. 5, 1916.—EDITOR: In regard to errors made in ordering, thereby hampering the efficiency of service in the line of Piston Rings to the garagemen and repairmen, we wish to state that the fault largely lies with the party that makes out the order.

As you will observe from our booklet, it plainly states, "when ordering, give the diameter of cylinder bore, the width of groove and depth of groove." If they would do this, and not only take a guess, there would be no trouble; also state the number of rings desired, instead of stating one set, as in some cases, they wish a full set for entire engine, or set for one piston—this we cannot guess.

A great deal of trouble comes from the so-called "combination-cars" now on the market. The man that sells the car puts on a new body and calls it a 1915, or '16, or some late model, while at the same time this car is an old model, no doubt as far back as 1909, '10 and '11. Consequently when the garageman or repairman orders he simply sends in order for rings for 1915 model car, or whatever model it was sold to him, or bears the name, whereas giving the diameter of cyl-

inder bore, width and depth of grooves would save considerable time, there would be less annoyance, trouble and unnecessary expenses.

If you would write an article on this to your readers we, as well as all other Piston Ring Manufacturers, would heartily thank you.

THE EVER TIGHT PISTON RING CO.

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### AMERICAN MADE CAR RECORD.

An American-made car now holds the track record on the Indianapolis motor speedway, which was formerly held by a French car driven by a Frenchman. In a test made by J. G. Vincent, chief engineer of the Packard company, the test racing car equipped with the light twelve-cylinder aviation motor, circled the big brick speedway in 1:30 flat, a speed of 100 miles an hour.

This is the fastest time ever made over the local course by a real automobile. Barney Oldfield, in the freak Christy, last May turned a faster lap, but that car is a "road engine" and in spite of the fact that he bettered 1:28, the record made by the Packard is considered superior.

## Announcing the

# Retail MOTOR TRADE Journal

Officers of the National Automobile Trade Association and the interests which heretofore have published GARAGE EFFICIENCY announce the completion of the organization of the Automobile Trade Press, Inc. The stock of the new corporation is owned jointly by the National Automobile Trade Association, affiliated organizations, those interested in the retail automobile trade, and Wesley T. Christine, whose services as editor and manager have been retained.

The National Automobile Trade Association is built on the sane foundation of the logical and reasonable desire on the part of its members for the adoption and use of better business methods to be put into force as the result of co-operative efforts of a constructive character.

That brief description of the purpose of the organization will serve also as an outline of the policy of the publication.

\* \* \*

Government of an industry by itself is essential to its complete development and enduring success.

Necessarily such government is wholly advisory and derives its power from the voluntary support and spontaneous loyalty of the governed. In all popular forms of government a majority of the active factors make and administer the law.

That commonwealth or that industry in whose general affairs the greatest number exercise the honor and privilege of taking an active part is the most successful.

\* \* \*

In all work of this character men must be coaxed to do that which is for their own profit and honor. It is impossible for the men active in this work to visit every nook and corner of the United States and personally to confer with members of the retail automobile trade.

Far superior results can be produced by bringing members of the retail trade into contact with each other through the medium of a special publication.

On this common ground we can meet once each month, can present and argue the questions of interest to all of us, and can secure the mature and carefully considered opinions of those who are working with their heads as well as with their hands.

\* \* \*

Today the retail automobile trade is in confusion. It sprung up rapidly to meet an imperative demand. It was—in some quarters it still is—considered extra profitable.

There exists much misunderstanding and some misrepresentation to give it a mild term.

To classify, to solidify and unify the retail automobile business and to make it more satisfactory and profitable to those engaged in the business is the mission of the National Automobile Trade Association.

The Retail MOTOR TRADE Journal was rebuilt to meet the greater demands that now are made upon it.

If this great undertaking achieves the success it merits it must have your personal support. There will be failure, in degree if not in fact, without you.

\* \* \*

Early in the history of the organization movement among the garagemen of Chicago there developed need for a publication devoted solely to organization work. GARAGE EFFICIENCY was launched to fill that need.

Organization of the retail automobile interests spread rapidly and the state and national organizations took in all members of the retail trade. It was with a feeling akin to dismay that the men behind the movement witnessed its rapid growth. They were not ready or equipped to handle the work in a national way.

A conference of leaders early this year resulted in the formation of plans for a national association along lines broad enough to include every element of the retail automobile trade. It was launched in January and named the National Automobile Trade Association.

Since that meeting field work on a large scale has been inaugurated.

Now that the organization has an official voice everything is ready for the Big Push.

\* \* \*

You are vitally interested in this work if you want a bigger, a better and a more profitable business.

Both the paper and the organization are built to serve you. They cannot serve without your consent and co-operation. If you want to secure the greatest returns on your investment call on either or both for information, advice or aid in handling any problem that comes up.

Giving attention to one or more of the problems outside of your regular routine will broaden your horizon and you will find, also, that your ability to handle your business will increase steadily.



## ABSURDITIES OF THE RETAIL MOTOR TRADE

Dealers who hold contracts for local agencies of certain cars complain of the harsh treatment received and the lack of profit derived from the business. Stating their case very plainly, they say the profit derived from a sale is less, per car, than the profit made by the manufacturer.

It costs the manufacturer very little, if anything, to secure an agent who will sell twenty-five or more cars per year. It costs considerable to sell a car at retail, and the dealer must sell every customer. Based on these grounds is the claim that the retail profit should be greater.

Retail distributors handling tires are dissatisfied. Ostensibly they receive a discount of 12½ and 5 percent, with an extra 5 percent for cash. If they meet competition and secure a reasonable volume of business they assert their profit is frequently represented by the 5 percent they receive for cash.

Opinion and results are about evenly divided with respect to profits in the garage business. Competition is keen, but from majority reports it would seem that good service can be sold at a profitable price, while the inferior sort largely is a drug on the market. Advertised rates in Chicago range from \$3.50 for plain storage for Fords to \$25 for full service for limousines.

In the general accessory field profits vary materially. It is an open field, with a variety of competitors for the business. Bargain offerings serve to disrupt trade, causing it to veer, flurry and fluctuate.

Profits and security in the retail automobile trade are less attractive than in any other branch of business. On most supplies and accessories the dealer's margin is a modest one. Volume is restricted by reason of competition with other retailers and also by reason of unjust competition between the retail dealer and the manufacturer or wholesale distributor.

When dealers stock certain accessories and supplies they receive no assurance in word or in fact that they will not be required to compete for business with the concern from whom their stocks were bought. That is not the prevailing custom in any other branch of business, but appears to be accepted as a matter of course by the retail automobile trade.

"Accepted under protest" would be the correct notation on this bill of particulars. This protest is growing, spreading, branching out, and now includes many of the large combination wholesale and retail houses.

Big men in the automobile business are beginning to realize the need for a substantial and enduring retail trade and to realize, also, that a live, capable retail organization cannot exist without an adequate margin of profit being assured in this line of endeavor, as in all others of like character.

By way of illustration, take men's clothing. The retail price on seasonable clothing includes a profit of

exactly 100 percent. When the season begins to wane that profit is reduced materially in an effort to unload the surplus, but it is doubtful if the "Below Cost Prices" quoted in flamboyant advertisements include a profit of less than 25 percent.

The result is that the clothing business is fairly stable. Failures occur, of course, but a house that has been in business twenty-five years or longer is not the exception.

Manufacturers of clothing do not protest about the profits of the dealer. They desire, above everything else, to see the dealer succeed, to the end that they may have outlets through which to market their products and a line of patrons who are financially responsible.

Despite the margin of profit in the clothing business, which may seem absurdly high to members of the retail automobile trade, the owners of such concerns make only a fair profit on their annual business.

For want of protection, for lack of understanding of the cost of doing business, because of competition between the dealer and the manufacturer from whom the dealer buys, the retail automobile trade is in a bad way.

While it might be putting it too strong to say that failures are the rule in the retail automobile trade, they are not the exception. Possibly one-third of those engaged in the retail automobile trade are making a fair profit from their business. One third, it may be said, is making a living and the remaining third is losing money.

This unhealthy condition is not without its menace to all identified with the automobile industry, either as an operator or as a patron. The demand for a better trade has originated within the ranks. Protests are being framed and addressed to all to whom they concern and to all to whom a betterment is of vital and compelling interest.

BETTER BUSINESS is on its way to the front. It is merely a question of time until the call for improvement will be unanimous. When that day arrives satisfactory disposition will be made of the questions which now confront operators. *Speed the day by helping.*

---

### IT CAN BE DONE.

There are thousands to tell you it cannot be done;  
 There are thousands to prophesy failure;  
 There are thousands to point out to you, one by one,  
 The dangers that wait to assail you;  
 But just buckle in with a bit of a grin,  
 Then take off your coat and go to it;  
 Just start in to sing as you tackle the thing  
 That "cannot be done," and you'll do it.

# Intensive Cultivation in Merchandising—Watchful Working

In the first two articles of this series the subjects of the extent of territory it was best to decide on for intensive cultivation and the kind of seed that produced the surest crops of sales and consequent profits were discussed. This article will deal with aiding the growth that is sure to come and prevent the weeds that are the result of neglectful indolence from retarding this growth.

It is very important that some kind of record should be kept of the actual sales result of whatever advertising is done. Where a card system is installed to list the names of possible customers for easy reference in mail advertising, this same system can be used as a record of results. As it is in alphabetical order it will take very little time to note the amount of any important sale that is made to one on this list.

Many customers will volunteer the information as to why they came to you, or what particular advertisement or letter attracted them. When they do not, it is good policy to ask the direct question, at least where the sale involved is large enough to make the information apparently worth while.

Your customers will give you a great deal of valuable information if you get in the habit of looking for it and following with questions all likely leads that you may receive in the conversation. For example, if a customer mentions the probability of his requiring a certain article in your line at some future time, a note should be made of the proximate time, where the value of the article is sufficiently large, and you should see that he hears from you regarding this particular purchase about that time.

One method of taking up deferred buying is by telephone, and the telephone can also be used in other ways for sales promotion much more than it generally is. If care has been taken to keep up the card records they can be gone over on days when business is dull and different persons called up on the phone where the card indicates that they might be interested in some special matter just at that time.

Care should be taken not to make this method of selling a nuisance to the persons called. If good judgment is used it is possible to cause the customer to feel grateful for taking an interest in his requirements instead of annoyed at an attempt to sell him something. No general rules can be laid down, but the same grade of salesmanship that knows how to handle the difficult customer in the store can easily handle this class of telephone work.

By W. B. PARKER.

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Note—This is the last of a series of three articles describing practical methods the automobile dealer and garage man can use in the work of business building. The writer believes many men are unnecessarily limiting themselves as to the extent of territory in which they reach out for new business, and others are not getting the results they should, even in the limited territory they are attempting to cover. Each of these classes will find ideas in these articles that can be put into actual, immediate practice, and that if so used should prove "cash producing."

In addition to securing all possible information as to the requirements of customers it is important to keep in touch with all that your competitors are doing, the condition of their stock, and the attitude of the public towards them. This, not for the purpose of obtaining material with which to "knock" them, but for the purpose of avoiding any mistakes they are making and also to learn where-in they may be giving better satisfaction to the public along some lines than you are. You know, the successful politician is always ready to trim his sails to the popular wind, and where this may show insincerity on his part, and therefore not be an admirable trait, yet it is necessary on the part of the merchant whose success depends on giving the buying public what they want.

Intensive cultivation of a given territory means using every means possible to encourage business growth. The merchant is not altogether limited as to his possibilities of growth by the seasons as the farmer is in the growth of his crops. If the merchant's turnover be considered as equivalent to the harvest of the farmer, it will be readily seen that the farmer is absolutely limited by the weather, while the merchant is only limited by his persistency in going after sales.

It is true that many merchants have the idea that in certain seasons there is no use of going after business and, therefore, place themselves voluntarily under the same disadvantages as the farmer. It is true that sales or orders are not likely to be so large in some seasons as in others, no matter what effort is made to boost them, but it is also equally true that well directed effort will increase sales at any time of the year, and that where such efforts are continuously

made, the totals for the year will show a satisfactory gain.

There is a type of dealer who never does any but very occasional advertising because he thinks that "When business is good there is no need of advertising and when it is bad there is no use." This is the kind of man who is not building for the future and who will always be struggling along with a small business if he is able to keep his head above water at all.

It is a solid fact that occasional or seasonal advertising very seldom pays either directly or indirectly. There is only one way of business boosting that is sure to succeed—and that is "keeping everlastingly at it." Intensive cultivation and the raising of regular crops of satisfactory profits requires the regular sowing of the proper seed, which in this case means newspaper space and strong sales letters at frequent intervals.

## SMASHES TRANSCONTINENTAL AUTO RUN IN PREPAREDNESS TEST.

SAN FRANCISCO, Aug. 3.—That the record-breaking transcontinental run just finished here under the guidance of S. B. Stevens, the millionaire sportsman of Rome, N. Y., was a test more vital to the United States of America than a mere demonstration of cross-country motoring was disclosed today when Mr. Stevens produced a telegram of congratulation from the trustees of the American Defense Society.

The high-speed dash across the nation was nothing less than a serious try-out of what the automobile can be counted upon to do in time of war. The run had behind it the important motive of preparedness with a view to ascertaining how fast men and supplies can be shot across the continent to the defense of the Pacific Coast.

The Stevens run beat the best previous record by 41 hours and 22 minutes.

The remarkable demonstration was made in a Marmon car equipped with Silvertown tires, and was an effort to demonstrate what it would be possible for a motorist to accomplish providing the original means of communication between the east and the west were interrupted in some way by the forces of an enemy. It also shows the possibility of the rapid mobilization of troops as an adjunct to train service, and further demonstrates the advisability of organizing at once a national motor reserve, similar to the very fine automobile reserve corps which you have here in San Francisco, only on a national scale.

# Making Letters Pay and Play a Part in Business Building

A business letter that is loosely written, that is slovenly printed or typed, is not an effective salesman.

No royal road to success in letter writing exists, but there are certain much frequented by-paths that should be shunned.

Humor is rather out of place unless it be impersonal. It makes all the difference in the world whether you laugh with or at a person.

The following anecdote recently was proposed as an introduction to a circular letter:

"I stopped by the roadside where a hot, perspiring, dusty man was struggling with a big tire. 'Is there anything I can do,' I inquired. He looked up, wiped the perspiration from his face and smiled gratefully. 'See that lady in the car,' and as I nodded, he continued in a whisper: 'She's my wife. I would be greatly obliged if you would answer her questions and keep her amused while I change this tire.'"

That would catch the eye, most certainly, but fancy such a letter falling into the hands of the lady in the case, and there are thousands of them throughout the length and breadth of this land. Unless she possessed an unusual sense of humor you would lose a customer, and the loss would be for keeps.

## Another Example.

Here is another example of letters that appear effective but may prove otherwise. Examine this one closely:

Dear Sir: Recently we sold a casing to one of our customers that was not all it should have been. It was rejected by us and set aside to be returned to the factory. By mistake it was put back in stock and sold.

We are checking up all late sales and if you will bring your car around one day this week we shall be glad to inspect the tires and if you have the one we rejected we will replace it with one that is first class in every respect.

We regret the necessity of taking up your time in this way, but if you will aid us to remedy this oversight we assure you it will not occur again.

I. B. SHARP & CO.

The fatal defect in that letter is the fact that the error was not committed. The purpose of the letter was to get the car owner in the garage in the expectation that he would be so touched with the sham exhibition of honesty that he would buy something whether he needed it or not.

Should the fact that the letter was nothing more or less than a decoy leak out, the result doubtless would prove disastrous, unless employed by that extremely limited class that appears to be able to get away with almost anything, insults included.

## An Open Line for Retreat.

The originator of the foregoing offered the following as a way out, that is, having told one lie, to tell another to cover it up:

Dear Sir: We found that defective casing in a corner of the storeroom boxed for shipment. It is a matter of extreme regret that we annoyed you with reference to this matter, but we are sure you will appreciate our desire to furnish you the very highest class of merchandise and the very best service.

When you are in need of anything for your car we feel sure you will give us an opportunity to supply you.

Again expressing regret for this error and trusting you have not been unduly troubled in the matter, we are

Very sincerely yours,

I. B. SHARP & CO.

## Building on a Lie.

That letter, and with it an outline for a series of letters of a somewhat similar character, was rejected because the foundation was an out-and-out lie. Falsehood, however ingenuous and attractive it may appear, is a most insecure foundation for a successful business.

The letter writer, and he is considered a top notcher, was highly indignant. He said: "That letter would bring every car owner in the community to the establishment that sent it out and if it should have been sent to customers of other garages, it would have brought them

canned advertisements. They rely entirely on literature, advertising copy and form letters supplied by manufacturers of the automobiles, supplies, tires or other accessories they sell.

Such advertisements are well written and have selling force and selling sense in them, but chiefly they are advertisements of the product not of the business of the dealer.

His interest which should be paramount is sub-ordinated to that of the goods he is advertising.

Your advertising, letters, newspaper display, circulars and billboard or road signs should advertise you and your business. You may not be quite ready for that just now, it may be the part of wisdom to use the superior (in an advertising sense) service the manufacturer is glad to supply you without charge, but begin, and begin now, to weave into your printed sales talk a bit of your own personality, a hint of yourself, so that ultimately your business will become YOU.

## Write Specifically and to the Point.

Here is a definite idea that may be varied to meet your needs or the condition of the accessories and supplies you wish to bring to the attention of your customers:

## DEAR SIR:

You will find a display of tire accessories in our east window. Some of these blowout patches, hook hold clinchers, lace holds and reliners you should carry with you.

The investment is very small and you will find them the best friends you ever had when you encounter tire trouble on the road. A few dollars invested in tire accessories may save you weary miles of tramping or a big bill for a rescue by the nearest garage or repair man.

By the way, safety treads are superseding plain treads for use on front wheels. We have a few of the plain treads left and can reserve a pair for you, if you wish. In the near future it may be necessary to order the plain treads from the factory.

Our stock of safety treads is complete. Our function is to keep your car on the road, and we are at your command in any way we can serve you.

Sincerely yours,

I. M. RELIABLE & SONS.

around if only from motives of curiosity."

"Perhaps," replied the business man to whom the letters were submitted, "but the same curious fellows would avoid that place like they would avoid a pest-house when the truth leaked out, and it would leak out, have no doubt about that part of it."

## Founded on Fact.

Put as much of your own personality as possible in your letters. It is your business and it should reflect YOU.

By far too many dealers are employing

A suggestion that should be acted upon, a bit of news regarding an important change in tire styles, an offer to aid the car owner to realize 100 per cent satisfaction from his investment merits and will receive attention.

Writing business bringing letters merely is the art of talking to the point and putting your talk on paper.

If you can get the idea over, four paragraphs are better than five, three better than four, but it is doubtful if two are better than three. If a some-

what lengthy explanation is required, it is better to make your paragraphs short and use more of them. By paragraphing at frequent intervals you get away from the solid page of type which repels

rather than attracts the eye.

Just one further point at this time: If you write your own letters wait until the world seems to be a pleasant place to live before working up the copy. The

"man worthwhile" may be "the man who can smile when everything goes dead wrong," but he is not the man that can write trade pulling letters, barring a negligible number of exceptions.

# Business Efficiency Consists in Stopping the Leaks

DETROIT, MICH., Aug. 8.—RETAIL MOTOR TRADE JOURNAL: "Better Business" is one of the slogans of our organization, in fact, our whole organization work hinges on these two words. They are the very foundation of the success of any line of business.

In an address given by Edward N. Hurley, vice-chairman of the Federal Trade Commission, before the Associated Advertising Clubs of the World at Philadelphia on June 29 last, the main topic was "Better Business Methods," pointing out where different industries throughout the country were adopting "Better Business Methods," not only to safeguard, but to increase their business.

Two important items were most prominent in the discussion—cost accounting and depreciation. He stated that, after preliminary study of the industry generally, made by the Federal Trade Commission, it had revealed the fact that only a very small percentage of manufacturers and merchants make any charge for depreciation on building, plant equipment, or seasonable merchandise, and that their products were priced and their profits determined before reckoning this vital and important item.

## Take Depreciation Into Account.

The Federal Trade Commission is urging on every business man the absolute necessity of making a proper provision for depreciation and do it monthly. The cost accounting system is not complete unless it does provide for the inclusion of this most important item of cost. Statistics show that over 50 percent of the business men do not include the item of depreciation in their cost accounting and this is one of the causes that has a great influence on the business death rate. Many business men do not charge any depreciation and give the reason that they keep their plant and stock in first-class condition.

This is one of the most erroneous ideas in business today. Every machine, building and apparatus, as well as seasonable merchandise, like every man, has a certain period of life, and no matter how much care is taken or how much medicine you give the man, death is bound to come.

In a letter written on May 12 last by President Woodrow Wilson to Mr. Hur-

By L. C. STEERS,  
Secretary Michigan Automobile Trade Association.

ley, he compliments the commission on the work that it is doing for the advancement of business methods throughout the country. Quoting part of his letter, he states: "Your suggestion that trade associations, associations of retail and wholesale merchants, commercial clubs, boards of trade, manufacturers' associations, credit associations and other similar organizations should be encouraged in every feasible way by the government, seems to me a very wise one."

After considering what the Federal Trade Commission is recommending for business houses throughout the country, it is only more conclusive that the garage stands most in need of this reformed business method.

## Value of Cost Accounting.

During the two years in which I have devoted part of my time to association work among my fellow garage men, I have failed to find a single instance where a cost accounting system installed in the garage did not correct 90 percent of price cutting and of other evils. A little less than a year ago I installed a cost accounting system in my own garage. I do not consider the expense of operating it any greater than my old bookkeeping methods, but I feel that it earns for me a good many dollars every month and as I see other garage men throughout Detroit and the state installing systems, I see the same business jump to a healthy condition by leaps and bounds.

A man buys a horn for \$3 and spends fifteen minutes' time selling the horn at \$4, spends another ten or fifteen minutes installing it on a man's car and when he puts the money in the till, he figures that he has made \$1. This, as you know, is absolutely incorrect, because he did not take into consideration the time consumed in selling the horn, the service in installing it, the rent and overhead of his business that was accumulating at the same time; and had he considered these things, he would have figured his profit on the horn at less.

## His Profit.

I stepped into a small garage the other

day, while out with some of our members on committee work, and saw the garage man make two double tire changes for his customer and inflate the balances of the tire. When he was through, the customer asked the price. "One dollar," was the quick response. The customer paid and departed. I turned to the garageman and said, "George, how long were you making that double tire change?"

"A little over an hour," he said.

"Have you got a dollar for it?"

"Yes."

"How much of that dollar do you figure as profit?"

"Why, all of it," he says.

I asked him if he was working another man. He stated he usually did, but he was short a man that day.

"You are doing the work alone, then?"

I said.

"Yes."

"According to that, you can earn about \$10 a day."

"Yes."

Then I asked him how much he would have left of his \$10 after he took off his rent, heat, light, postage, telephone, time consumed in bookkeeping, and other things. He said that he had never thought of that. We figured it up. It would take about fifty cents of his dollar to pay his overhead and depreciation, leaving fifty cents for his hour and ten minutes' work. He asked what he should have charged and I immediately told him that he should have charged what the labor was worth plus his overhead, if he wanted to break even and give himself a square deal and at the same time give a square deal to his customer.

I could enumerate hundreds of instances somewhat similar. The garageman is beginning to wake up to the realization that his business must be run on a business basis and anything that you can do towards helping place the garage business on an equal basis with other mercantile lines will be greatly appreciated by every garage owner throughout the country, who has already placed a cost accounting system in his own business and stopped the leaks of the business. It is the leaks that eat up the profits and eventually throw the garageman into bankruptcy.



### WHAT'S THE USE.

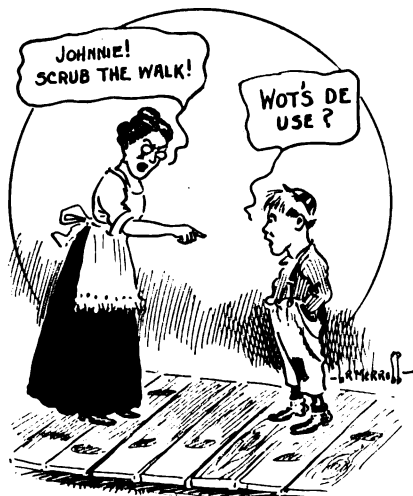
When I was a little fellow my mother told me one Saturday morning to scrub the back walk. I had scrubbed it the week before and it was just as much in need of cleaning as it was last week, so with childish philosophy I looked up at mother and said, "What's the use."

She told me if that was the way I felt about it I could go and live with old Dan Wickle, for that was the way his premises looked. Now, Dan Wickle was a slovenly old man who had some property on a back street of our village and it was the toughest looking place in town. The yard was one great litter of trash and mud and the walk looked like an old time corduroy road, as it was covered over with trackings from the yard. Grass shot up here and there and toppled over heavy with seed touching it up with raggedy appearance.

Mother said he was a "What's the use" sort and if I was of that opinion I could just pack up my duds and go to live with him. With visions of living in that place and walking down town by the side of that slovenly old man instead of my spic and span father I then and there decided to scrub the back walk and never again say, "What's the use"

### A "What's the Use" Garage.

I went into a "what's the use" garage the other day and the first thing that popped into my mind was old Dan Wickle's premises and mother's words to me. I actually expected to find old Dan himself, but if that were he, he surely had been rejuvenated.



A young man came shuffling towards me when I asked for the proprietor. I greeted him with a "Good morning," but he just spit tobacco juice and looked at me.

The value of a "Good morning" is the same the world over, at home, in society,

I then and there thanked my mother for her discretion in not allowing me to drift into "What's the use" class.

When that garage man received his money for that job I assure you he wished he had kept strict account of the time, for he certainly would have been



or in business. Somehow it breaks the ice and warms things up a little.

I went over to this particular garage to get an itemized statement of some repair work done for a man who thought his bill preposterous. Our proprietor was to adjust the matter, and in order to do so he sent me over to obtain the information wanted. I approached the subject tactfully, but when I asked him to specify the number of hours on certain work, he replied, "Can't do it." When I inquired why, he said, "No such record kept."

I told him how we kept a record of each man's work and by reference we could tell what each man did any fifteen minutes of the day. He spit some more tobacco juice and looked up and said, "What's the use?"

better paid. I doubt if he reasoned that out. He had a mind, but didn't use it. His talents were laid away and not invested.

### Do Anything We Think We Can.

Psychology tells us we can do anything we think we can, but we must think. Did you ever notice when a tune of some familiar song comes into your mind you will a little later in the day unconsciously be whistling it. Or if you have forgotten a name and cannot recall it, a little later it will flash into your mind vividly.

This is not an accident or a notion, but psychology teaches us we have two minds, an objective mind and a subjective mind. The objective mind is our conscious mind or the one we have direct control of. The subjective mind carries

out what the objective mind first thinks or conceives.

We must first think a thing before we get it and if we think hard enough we will get it.

It strikes me the garage man doesn't do enough thinking. If he did we would have better service and equipment.

Because a man is a mechanic or workman is no reason why he should not use his mind. There is much to accomplish in these lines and to know what needs be done the thinker must be a workman, and the workman a thinker.

Too many undervalue their own mind which is more of an injustice to themselves than to be deprived of one of their senses. Dante says:

Are you in earnest? Seize this very minute;

What you can do or dream you can, begin it;

Boldness has genius, power and magic in it.

Only engage and then the mind grows heated;

Begin, and then the work will be completed.

## THE GARAGE UGLY DUCKLING.

(The clock and calendar on the bookkeeper's desk in a garage.)

Clock—Hey-day. What's the matter with you this morning? Still asleep? This is today and not yesterday. What are you wearing your yesterday's gown for?

Calendar—My maid has not arrived yet and I can't change dresses without her.

Clock—And who, pray tell, is your maid?

Calendar—The bookkeeper, of course.

Clock—What a helpless bunch of paper you are.

Calendar—Useful, just the same.

Clock—Conceit personified. If that were me talking in such a manner it would be an entirely different matter, for I tick away day in and day out, and my hands point out a face value. I tell people when to go to work and when to go home, when to eat, when to sleep and when to play. I'm busy from one week's end to another. I never stop. That is work. That is usefulness.

Calendar—Did you ever hear that old saying, "Still water runs deep"? You are loud and noisy about your work every second of the day reminding everyone who comes within hearing distance that a second is gone, while I stand quietly by as you tick away some eighty-six thousand seconds, my very apparel representing a whole day of the month.

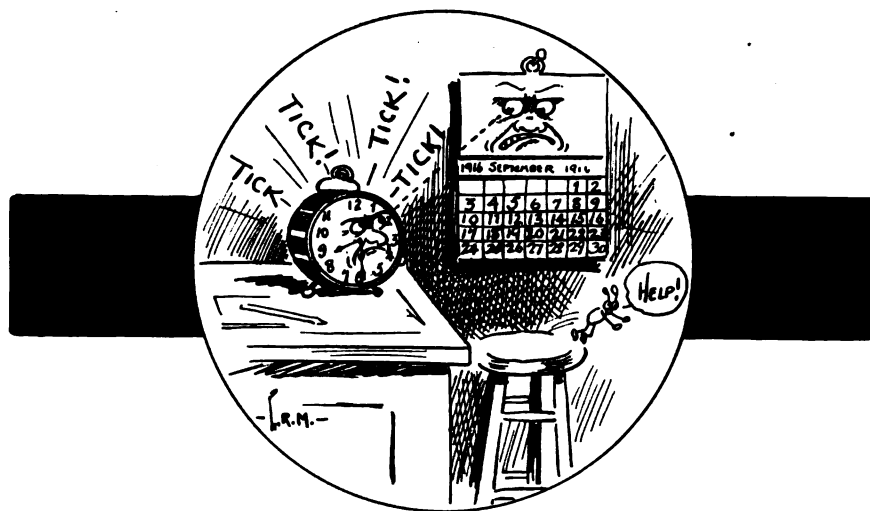
Clock—And who wants to know the day of the month?

Calendar—Everybody. When a man comes in to pay his bill he invariably looks up at me before he writes his check. The bookkeeper couldn't get

along without me. Every entry that he makes bears the date I wear.

Clock—Who remembers the number of your dress, I'd like to know, after the bookkeeper slashes his knife across you and consigns that dress to the waste basket?

Calendar—The dress goes into the waste basket, I admit, but the memory does not. My dress number goes down in black and white on every document.



Goes down on record, Mr. Ticktock, and where do your ticks go? Through one ear and out the other and quickly forgotten.

Clock—I'll leave it to anybody around here if the clock isn't a more useful piece of furniture than a calendar. You finally all end up in the waste basket. Why in the deuce does the bookkeeper tear off just one leaf every day? He could cast you all in at once and be done with it.

Calendar—That is just it. Every one of my leaves have a mission to perform and that can't all be done in one day. It takes 365 days to do it and not one less. Each leaf represents a day and if that all went in the waste basket at once 365 days would go fast and you, Mr. Clock, would tumble head over heels to keep up.

Clock—You are a dependent piece of nothing, however important you try to make yourself. If the bookkeeper didn't tear off a leaf each day what would you do with yourself, pray tell?

Calendar—No smart talk like that or I'll put a gentle reminder in your ear. You are as dependent on the bookkeeper as I. Who winds you up every morning?

Clock—That's an entirely different question. It's nonsense.

Calendar—Nonsense nothing. Why then did you stop the other morning and cause that old guy to miss his train.

Clock—There, you admit I am important. You couldn't do anything like that.

Calendar—It's not a matter of hours and

minutes with me. When I fail to shed a leaf, it's a day. The day the bookkeeper's grandmother died accounts were all one day in arrears and that being the last day in the month it held up just \$1,000 for the proprietor for another four weeks.

Something soft and sleek squirmed on a ticket hanging on the file and finally made itself heard.

Ugly Duckling—It seems to me neither

one of you fellows are as important as you think you are. After all, you are wholly dependent on the bookkeeper. If you were not wound up or torn off you wouldn't be of any force whatever. The bookkeeper hates me, but if it wasn't for me there wouldn't be any books to keep.

I'm the guy in the garage that makes things go. I don't have to be wound up or torn off. My value is intrinsic and I make things slip right along.

What is a clock or a calendar? Pretty desk ornaments? Yes, but I am not. I get there just the same, on the papers, books and files. Some times the bookkeeper raises the deuce. I'm on everything and every car or a car wouldn't be worth driving, could not be driven. No, sir; I know what I am talking about. There would be no garage if it weren't for me. I'm very friendly with the men in the shop and the proprietor himself. I even touch up their faces and clothing, but the bookkeeper raises Cain when I get on the telephone or desk.

The other day a man wearing white trousers got me on his hands, consequently couldn't reach in his pocket for his money to pay his bill. The proprietor had the bookkeeper reach in for him, which made matters better.

"I am not a bright, noisy, ticking affair, nor a gaudy numbered block of paper. In fact, I am the ugly duckling of the garage, performing the duties of a beautiful white swan, although the bookkeeper or the fellow in the white trousers try not to come in contact with me."

Just then the door opened and the appearance of the bookkeeper put an end



to the conversation of the clock, the calendar and the ugly duckling.

After hanging up his coat and hat he took down the feather duster. Swish, swish, he drew it across the files, the magazines, the chairs and safe. When he came to the desk he moved the ink stand so as not to swish into it, but with the next dash he swished into something worse without knowing it, but another swish brought him to his senses and he commenced to swear. The ugly duckling had been carried in unconsciously by the proprietor and left on a ticket on the file. The duster swishing over it

diffused it over the other papers and the desk.

"Out of your place again, you little varmint," he cried.

"I can't get rid of you at a garage, I'll confess, but I'll get the alcohol after you and run you out of the office for a while at least." So saying he dashed some alcohol across the desk.

The ugly duckling took to his heels, running at high speed out the office door, past the gasoline tank, down the center of the garage to the big grease vat and jumped in.

INDIANAPOLIS BOOKKEEPER.

## Bill Tackles a New Job — Enters the Thinking Class

By J. W. Hayden, Cambridge, Wis.

"Oh, Ed, where's that gasoline man's sales ticket? He filled the tank yesterday, didn't he?"

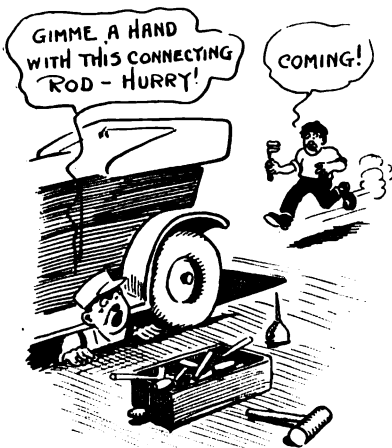
Bill Rumford stood in the doorway connecting the two rooms of their ga-

rage. "Oh, he put it in all right. He's honest."

"Sure he's honest, so are we all; but he could make a mistake, couldn't he? You make 'em, don't you, and he don't know as much as you do, or he wouldn't be hustling gasoline. How much do you suppose Ed got for fixing that carburetor?"

"Oh, I don't know, seventy-five cents or a dollar."

"Well, now, look here, Bill. Suppose the gasoline tank driver makes a mistake of five gallons. Easy enough, ain't it; he measures it into your tank in five-gallon pails, don't he?"



rage. A voice from the pit in one corner answered:

"Yeh, he filled it. I laid the slip on the desk last night. Say, Bill, come here and give me a hand with this connecting rod, will you? I can't hold all the shims in place and the box too."

Bill obligingly crawled down into the pit and helped his partner until the nuts had been drawn up enough so that he could leave.

"How much gas did he put in, Ed?"

"Doggoned if I know; I was busy fixing a carburetor and couldn't leave it."

### Checking the Gas Man.

There had been a very interested audience of one to all this; Jimmy Valencia, a tire salesman.

He followed Rumford out to the desk and was at his shoulder when Bill finally found the sales slip after much rummaging.

"Hm," said Bill to himself, "I didn't think she would hold that much."

"How do you know he put it in?" broke in Jimmy.



"Yes."

"He might make a mistake of one pail easy enough, couldn't he?"

"Yes."

"Well, then, where's the dollar you made fixing that carburetor? Shot to pieces, ain't it? You can bet your money I'd be there myself when they put gasoline in my tank."

### Manifold Demands on the Garageman.

"Gee, he couldn't let a car wait, could he, while he watched a man unload a tank of gas? Takes an hour sometimes. He couldn't go away and leave the shop,

could he?" continued Bill. "Suppose someone wanted gas out in front? Would he tell 'em to 'go to,' he was busy? Nix. You can't run this efficiency stuff you're always springing, too much. We make money, don't we?" He was growing rapidly angry.

"Aw, now, listen, Bill. Sure you make money. You ought to; you work hard for it. But nobody'll have you arrested if you make a little more, will they? And you could use a little more, couldn't you? You told me yourself you'd put in a curb pump if you could grab off a little more coin."

### Profits on Gasoline.

He settled himself on the desk and assumed a judicial air.

"Do you know how much you make on gasoline in a year, Bill?"

"No-o," said Bill, reluctantly.

"Do you know what the percentage of evaporation is?"

"No-o."

"No, you just have your tank filled and sell it out for three or four cents more a gallon than you pay for it and when you have a hunch the tank is getting low you give a look and telephone the tank man, eh? I'll bet you don't even have a measuring stick that'll tell you how many gallons there is in the tank if it shows six inches. What?"

"No," we haven't," confessed Bill.

"Well, listen close, Bill. I'm giving you something for nothing. Get a measuring stick, keep track of every gallon you buy and every gallon you sell and you'll find that if you start this system at one end of your business you'll soon



want it in every part of it and then you'll know where you make the most money and when you get there—you're on the right road, take it from me."

"So long, Bill." He picked up his grip.

"So long," said Bill, absent-mindedly. He was thinking.

# The Outgrowth of a Garage Enterprise — A Profitable Business

"How do we do it? I think by continually pounding away on today's business.

"When I sit down at this desk in the morning all the ragtag of yesterday's affairs is cleaned up and we start immediately on this day's work."

That is the deliberate conclusion reached by H. E. Halbert, manager of the Garfield Park Automobile Garage, association worker and tire dealer.

It is rather doubtful how Mr. Halbert would classify his activities with respect to the order of their importance. Possibly he would say "association worker, garage operator and tire dealer."

On a basis of financial returns they would rank in this fashion: Tire dealer, garage operator and association work, the latter being a liability on a basis of receipts and expenditures and an asset from every other viewpoint.

## Sensing Possibilities

Away back in the early days of the automobile and that then necessary evil, the wayside garage where a car could be patched up well enough to make the next life-saving station, Mr. Halbert opened a modest establishment on the west side, near Garfield boulevard.

There was nothing in the appearance of this garage to distinguish it from hundreds of others scattered over the city. It was a frame shack with storage capacity for about twenty cars and a more or less efficient repair shop in the rear.

The proprietor was not laboring under the delusion that a year or two in the garage would put him on easy street. He did believe that the automobile was here to stay and that rightly conducted, a garage should pay the owner a profit.

He never has had occasion to change his opinion. Clean, efficient work, courteous treatment, ability and willingness to serve the public are as effective in securing and keeping patronage for a garage man as for any other business institution and just as potent forces now as ever before in the history of the business world.

Serving the public does not mean to be duped by the public, imposed upon by it, nor does it mean to operate without a profit. Mr. Halbert's business philosophy is this: Service should be furnished at a profit, otherwise adequate and satisfactory service is impossible.

That bit of commercial wisdom dominates his business policy.

## The Garage End of It.

According to Mr. Halbert's view, the garage operator buys space at wholesale,

work of these two shifts.

"He must be the governor and regulate the business. It is not necessary that he do the work himself, but it is necessary that he make sure it is done, and done right.

"He must carry the business, even the detail of it, in his head. He must weld together and harmonize the efforts of the day and night crews. He must be on the job a good many hours in the day, though not necessarily in the garage at

all times. He should be there early to set things going, should drop in at intervals during the day to see that work is going forward and should be available in the early evening.

"This schedule makes a long day of it for the manager, but the real manager will build up an organization that almost is capable of running itself.

"Many owners, in my opinion, would be better off if they would elevate a member of the force to the position of manager. Certainly they are not giving the

business the attention it must have to make it a success and better results probably could be secured by the undivided attention of a man, even though less capable than themselves.

"Once each day the affairs of the garage should be checked and all transactions brought up to date. It's the hang-overs in business that consume profits, time and nerve force. Clean them up daily and get rid of them."

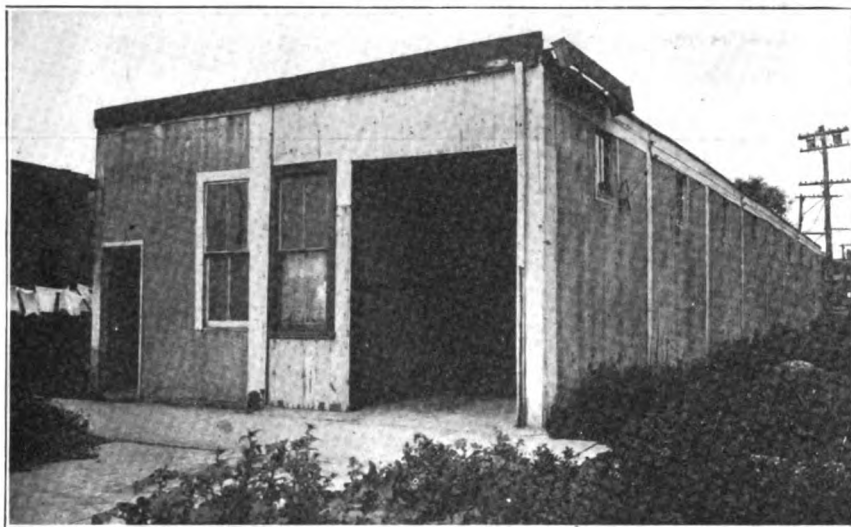
## Possibilities of the Tire Trade.

"I want two 34x4½ plain-tread Diamond casings," said a customer.

"I am sorry," replied Mr. Halbert. "I haven't a plain-tread in stock and am sure there is none in town, but I will find out."

He turned to the telephone and a few minutes later reported there was nothing nearer than the factory and that the order would have to go through as a "special" and the tires be supplied by the factory.

"Better take two safety tread casings along. They are being used now almost



H. E. Halbert began business July 1, 1906, with a capital of \$200 in this building, a frame shack 25x125 feet. He was a charter member of the Chicago Garage & Auto Livery Association, one of the first organizations formed by garagemen.

for which he pays in advance, and sells it at retail. He believes all commodities should be sold on substantially the same terms the dealer is required to pay.

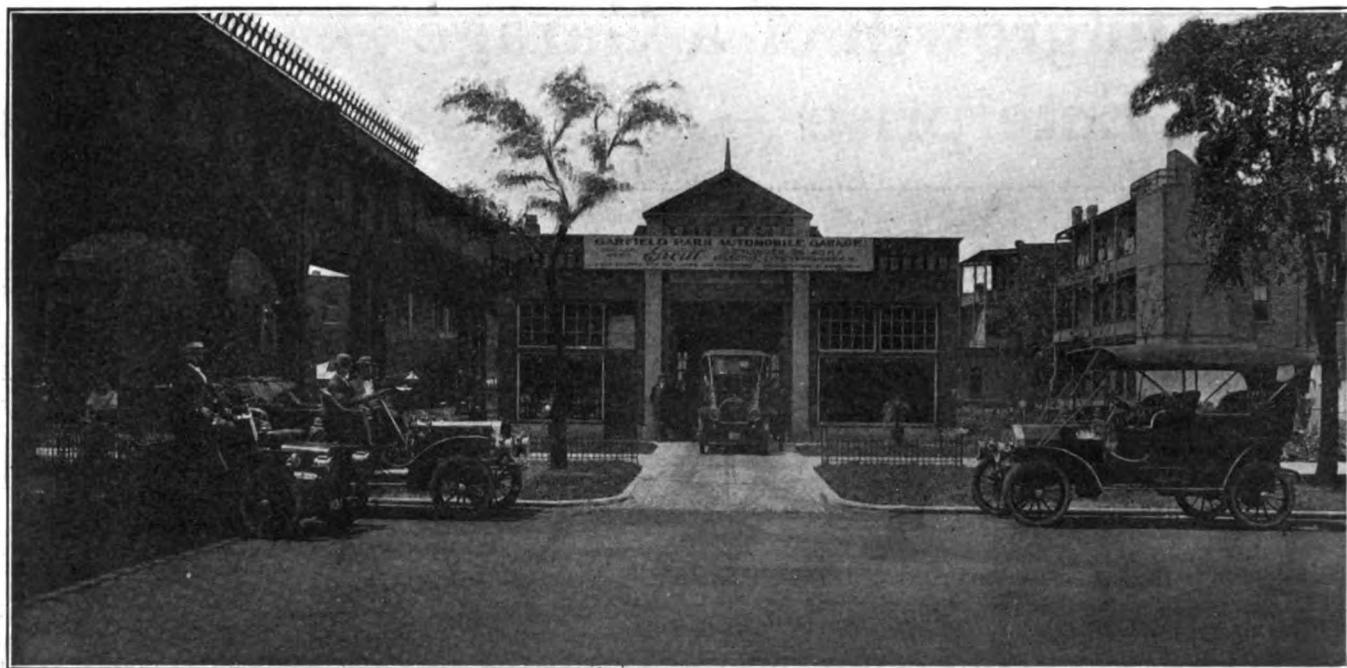
Applying this idea to storage, it followed naturally that the dealer should collect in advance. He put that plan into effect with the loss of only one customer. At the same time he put in a "pay-for-what-you-get" plan that was an innovation.

His views on garage operation and profits, the result of experience, are definite and clean-cut. Here is an outline in his own words:

"There is not another business in the world like the garage business. That is the chief reason there are so many failures.

"Many who engage in this business do not appreciate the nature of the demands that will be made on them, consequently they are not equipped to satisfy them.

"A man operating a garage must do a certain amount of detailed work himself. He is handling two forces and is operating 24 hours a day. He must co-ordinate the



In 1909 the business was moved to 606 Independence Boulevard and incorporated as the Garfield Park Automobile Garage. His interest in organization work continued, and during that year he served as vice-president of the Illinois Garage Association.

altogether for front wheels as well as rear. If your customer insists on the plain-treads you can send these back."

Turning to an employe, he said: "You will find those 34x4½ in that third stack. Take off seven casings and you will get to the size he wants. If they should come back put them in place.

#### Possibilities Realized.

Years ago Mr. Halbert reviewed the possibilities of the tire trade. He decided a success could be made of the tire business, *provided* the man engaged was willing to work, that he was a business man, that he had sufficient financial backing, that he offered a tire of standard merit and secured a price for it.

He has built his tire business on these premises. It is a magnificent, though a one-man business. A very conservative estimate of the overturn for 1916 would be a total in excess of \$100,000. Of this business 75 percent is wholesale and 25 percent is retail trade.

In all probability Mr. Halbert is selling more tires to the garage men of Chicago and vicinity than any other dealer or branch establishment in the city.

He is doing it for the reason assigned by a garage man when ordering a set of tires for a customer's car: "Well, you always have treated me white and you will have my trade as long as you do."

#### Specializing.

While Mr. Halbert handles all makes of tires, he has specialized in the Diamond and B. F. Goodrich brands. He handles this business personally, though recently he put on one salesman to work up local business.

All the books of the Garfield Park Automobile Garage, Inc., are kept by one

man, and each day are checked personally by Mr. Halbert.

An accurate account of tires in stock is maintained and this record enables the day or night crews to tell in an instant if the style, make and size of tire desired by a customer is in stock.

Mr. Halbert has a wonderfully retentive memory and knows his tire stocks better than employes can figure it out with the aid of the book records kept. An illustration of his knowledge of it has been given.

Two or three of the day men sell tires and the night foreman also sells, so an accurate stock record is absolutely essential to the satisfactory conduct of the business.

#### The Tire Trade.

In conducting a business of this sort it is necessary to avoid the pitfalls and shoal waters of the trade.

Mr. Halbert has received many flattering offers calculated to induce him to abandon his special make and push others in their stead. Such offers have been unhesitatingly refused and he sticks to Diamond and B. F. Goodrich products, believing they offer as great a value as any tire for the money and being unwilling to attempt to rebuild his trade for other tires, notwithstanding the alluring baits offered.

For example, offers in the way of larger discounts have been refused on the substantial ground that it was not good business to make a change.

The automobile tire trade is struggling along under many handicaps, the majority of which have been imposed by manufacturers of tires. Most tire

companies publish a number of lists, confidential and preferential.

A certain discount is given the dealer, the jobber gets jobbers' rates, the manufacturer gets manufacturers' rates. There are discounts made to a preferential list of dealers, and another list to a selected number that comes between the "Confidential Dealers'" list and the price to jobbers.

The great drawback to the trade comes from the fact that by hook or by crook, intentionally or otherwise, consumers are getting the benefit of these trade discounts.

#### Discounts and Other Things.

Margins of profits for those who handle tires are steadily declining. In 1908 standard discounts to dealers were 25, 10 and 5 percent. About that time one tire company put an agent in Chicago who had agreed to double the volume of sales.

That volume of business was not reached, but as a result of the undertaking tires were sold in Chicago direct to consumers at 5 percent below the price paid by dealers. The final outcome was demoralization of prices and custom, a condition that has not been wholly rectified.

Conditions became so bad that ultimately the B. F. Goodrich Company issued its Fair List Prices to dealers and gradually other companies swung back into line and began to work for more stable and satisfactory methods.

#### Policy Toward Dealer.

"If I were asked to frame a policy which should govern transactions between manufacturer and dealer, I would, with considerable hesitation, suggest the following: 'Classify buyers as manu-



Capacity of the Garfield Park Automobile Garage is now double that of 1909. This building serves as a garage and in part as a warehouse and salesroom for tire stocks. Mr. Halbert has served as president of the Chicago Garage Owners' Association since early in 1915. He also is treasurer of the Illinois Garage Owners' Association.

facturers, jobbers and dealers. Establish and enforce standard discounts and give them only to the trade that are doing business in the right way.

"If this were done, many of the dealers who now sell tires would be forced out of business or be forced to handle seconds exclusively. The final outcome would be to standardize prices and custom so that every dealer would know just about where he stood."

Mr. Halbert is a stickler for prices. In one case the price was cut and slashed until the opposition dealer offered tires at cost with a view to increasing the volume of his business and ultimately securing a better discount. One big order was sold on these terms and the tires were called for abruptly. The dealer fell down on the order, which finally was filled by Mr. Halbert on the basis of his original quotation, and the understanding that it required capital and brains to operate a business and that both demanded pay on penalty of jumping the job if refused.

That buyer is still a customer, and a big one, taking tires in lots of 100 or more at a time. This part of the business is handled on a narrow margin, but Mr. Halbert in this case insists that there be a margin and that it be sufficiently wide to permit him to make something worth while on the transaction.

He admits that tires may be bought

and that possibly deliveries can be secured from other dealers at lower prices, but if the buyer wants exactly what he orders at exactly the time the tires are needed, then a price that will enable the seller to make a turn on the transaction must be paid.

#### Aiding Others.

Enlisting the aid of other garagemen in selling tires at retail has been one method of building up this business. He has made a special study of how to get a fair price, a price that will give the retail dealer a profit, and is teaching and preaching the results of that study to garage operators of the city.

Only those engaged in the business understand what a scramble there is for the tire trade in a large city. The garageman with a small stock of one or two brands of tires encounters competition with other garagemen, with the general tire stores, with the department stores and their heavily advertised bargains, and also with the local branches of some of the best and largest tire manufacturers in the country.

Profits dwindle until there is nothing in a sale for the small dealer. Within the last sixty days standard makes of tires have been sold consumers of Chicago at dealers' prices and such sales have been made on very flimsy pretexts.

Notwithstanding this drawback, Mr. Halbert has succeeded in interesting

many garage operators in the sale of tires, has explained the situation and given encouragement, and the result is that many garagemen of the city are active factors in the tire trade.

#### Halbert Business Philosophy.

"How to sell tires and get the price" would serve as an excellent title to Mr. Halbert's work along this line. That the tires are sold and that prices are maintained is shown conclusively by the steady receipt of orders for tires by the Garfield Park Automobile Garage.

Having the goods and delivering them as wanted is another bit of Halbert Business Philosophy.

"If a garageman makes only \$25 a month on the tires he sells, he is \$25 to the good, plus having created in the minds of a number of customers the idea that he is a live business man, entitled to confidence and respect."

This year the tire business has been unusually brisk. Possibly the increase might be traced to the results of the fair business policy pursued. Last year there was a decline in this branch of the business, attributed by himself and friends to the fact that he devoted so much of his time to association work.

But that, as Kipling was accustomed to add, once upon a time, is another story, a story that will be told on another occasion.

# A Car Dealer Presents an Outline of His Own Troubles

"This completes the layout," remarked the dealer, stopping before the latest model in the salesroom.

"It is exceptionally well arranged and your facilities are unusually complete," replied the Scribe. "I have always thought," he continued, "that once a dealer has established himself and built up a reputation his business is the most stable and satisfying in the commercial world."

"You think that because you are young in the business," was the crisp response.

"But," objected the Scribe, "people in a community of this character always will want Blue-Blazes cars. All you have to do is to offer a car as well known as the Double B and they will hunt you up to buy."



"Possibly," was the noncommittal response.

"Another thing, you are established. You own this building and equipment. You have a big accessory and supply trade, you do repairing and you sell the Double B, what more could any man ask?"

"Well," said the dealer in a tired voice, "he might ask some assurance that he would have the Double B for sale next year, next month, or even next week."

"How's that?" demanded the Scribe quickly, scenting a story.

"Well, suppose you came here, looked over the city, and decided you could sell 50 more cars than I am now selling. We will assume you know something about how to sell cars. Your next step would be to go to the factory, tell them they have a dead one in this town, that you can do more business than I am doing. You can put up your deposit with the company, arrange to finance yourself to take up the cars when they reach you, if they ever do, and next week, next month or next year you are the local agent for Blue-Blazes. Simple, isn't it?"

"But your contract with the manufacturer?" objected the Scribe.

"So far as I am able to learn that con-

## ONE OF MANY.

Tell us about your experiences with contracts put out by automobile manufacturers. Herewith is given several whose circulation heretofore has been by word of mouth.

This evidence must be put in shape for use, and your aid in collecting the evidence is required.

## A WARNING.

At the same time efforts are being made to collect the facts in the many cases where the dealer is to blame. Do not imagine for an instant that he is wholly guiltless.

He must mend his ways as well as insist that the manufacturer change his tactics. Let us have your experiences on both points.

tract may be amended, altered, changed, vitiated or revoked at the option of the manufacturer and so may almost any contract between dealer and manufacturer. These contracts bind us to take cars that are shipped, but they do not bind the manufacturer to ship the cars we order, have sold and are unable to deliver because the producer has greedily gone after more business than he can handle."

"A contract of that character is entirely unjust and inequitable," objected the Scribe.

"Absolutely," assented the dealer, "but it's Hobson's choice."

"If you will sit there quietly I will tell you a few things about dealers and their troubles and after I'm through you can forget the things you have been told or, at least, forget who it was that told you."

"Shoot!" said the Scribe.

"A friend of mine, a thoroughly good fellow, owns the Green Imp Auto Company. He has been selling the Green Imp in this city for seven years. He knows the car, understands about the quantity that can be sold each year. He has a fine plant in which he takes great pride. His service station is a model, mine was fashioned after it. He has been handling fourteen counties in this state. He is known, far and wide, as the Green Imp Man. Well, along comes a man from the main office, cancels his contract, and hands the agency over to a fellow from out west. He may be the finest fellow in the world, he may be a far better salesman than my Green Imp friend, but he will have to sell the car on its merits minus my friend's personality, and that is a very considerable asset, let me tell you.

"A customer came in last week and I sold him a Blue-Blazes. He had made up his mind to buy a Green Imp but when he found the agency had changed hands—he never thought such a change possible, any more than he expected the sun to rise in the west—why, he just drifted over here and let me sell him a car, but he had

figured out a lot of funny things to say to the Green Imp Man and was disappointed when fate robbed him of the opportunity.

"Now, just fancy this Green Imp Man going out and trying to sell any other make of car. He's quick and he may find a way to catch the popular fancy, but it seems to me he has a hard row to hoe if he tries it. He had better sell out entirely to the man who picked his agency plum.

"We have been poking fun at the fellow across the street that formerly sold the Red Devil. He had a salesroom large enough to get a car into it if you were careful, a desk, a file, and a chair or so. He had no service station and made no pretense of being a big gun in the business. Privately we called him a curb-stone broker, but that did not bother him.



They took his agency away. So he moved his desk and chair out and in that very simple and economical way he closed up his business. There was no heavy investment to bother him.

"An agent down the street received a consignment of '15 models and a day or so later the factory instructed him to advertise them as '16 models. He refused. A few days later our local papers carried full page advertisements, signed by the manufacturer, asking for "A Live Dealer" to handle the '16 models. Because that dealer refused to advertise a line and because he refused to be dictated to as though he were on the pay-roll of the company, he lost the agency. Incidentally the company lost a lot of its prestige in this locality, for this town is small enough for Old Lady Grundy to get in effective work.

"Over in Plumhtown a dealer refused to order twice as many cars as he had sold the previous year. They took his agency away from him and put in a branch. I am happy to say, for that was a fool trick, that the branch sold not so many as the dealer had sold the previous year.

"Take my own case. I have built up this establishment on the strength of having handled a certain car many years. During the first four years we got along



beautifully. One year the car I am selling went bad. I spent my own money to uphold the name of the car because I felt obligated to look after the interests of the customers to whom I had sold cars. I received no real help from the factory service department.

"The next season I received shipments of cars that were not scheduled. The company had overproduced. We took them in and finally sold the lot, but it was hard work.

"Later we wanted cars to fill sales we had made. We received less than a third of our needs and less than schedule. So we spent our time writing refund checks and that, you must know, is an exceedingly pleasant occupation for a dealer.

"The factory wanted more dealers so they divided our territory into three parts. That was a hold-up, pure and simple. The



as a chessboard and the dealers pawns, which may be moved about at will. A territory may be cut up, subdivided, or re-assigned, without consulting the dealer, and his protest is ineffectual and will be until it is a united protest.

"Take the question of profit per car: Ordinarily the dealer's profit per unit of merchandise handled exceeds that of the manufacturer or wholesale distributor. In automobiles the reverse is true. The manufacturer makes more money, net, per car than the dealer.

"Another thing, they tell us the service cost will be so much per car. Possibly the allowance made is liberal but it falls short by half of covering the actual service cost. We have to rectify all factory mechanical mistakes and maintain the reputation of the cars we sell at our expense, called service, or we cannot sell cars.

"That is not a pleasant review of the situation, is it? Well, you can talk to manufacturers and they will tell you just as woeful stories of the shortcomings of dealers. Tell you how the dealers are not business men and not alive to the opportunities of the hour. They can tell you stories of stupidity and tales of blunders perpetrated by us that would make your heart sink and you would wonder how they ever endured to have us handle their cars for a day.

"Under present demand it is possible for dealers to make a lot of mistakes in handling their trade and for the manufacturers to make even more mistakes in handling the dealers without seriously affecting the volume of business.

"The day is coming when all these errors of judgment and policy must be remedied. The hopper of demand one day will be filled and then it will be a case of replacing cars as they wear out. When the virgin field of demand in this country has been exhausted it will require more money and better business judgment to make a success of the automobile trade.

"If that were true today we, ALL OF US, manufacturer, wholesaler and retailer, would go broke because we are violating too many of the established laws of good business to make an honest-to-goodness permanent business success.

"The automobile factories can produce at this time something like 2,000,000 cars a year. If the average life of a car be five years, then it will require the operation of 10,000,000 motor cars to afford a sufficient number of replacements to ab-

sorb the output, or we will have to develop foreign trade, an enterprise in which American business men are not adept for the very simple reason that we do not know how to cultivate trade.

"How many dealer contracts, such as are used in this country, do you suppose manufacturers could close with foreign distributors?"

"Better treatment of the dealer will call for the introduction of better business methods, a closer study of the business, less bunk in advertising and a disposition to get down to brass tacks.

"And so," concluded the dealer, "I have carried you behind the scenes. How does the business appeal to you now?"

"Different," replied the subdued Scribe, "I have seen a few get rich quick and I was thinking of getting in—but not me if the dealers' position is as uncertain as a gambler's chance on a fake horse race."

### FIRST ENTRIES FOR THE HARVEST RACING CLASSIC.

INDIANAPOLIS, IND., Aug. 12.—The first entries for the Harvest Auto Racing Classic, which will be held under the direction of the Indianapolis Motor Speedway on September 9, have been received by General Manager T. E. Myers. The cars named are two Peugeots, and they will be driven by John Aitken and Charles Merz.

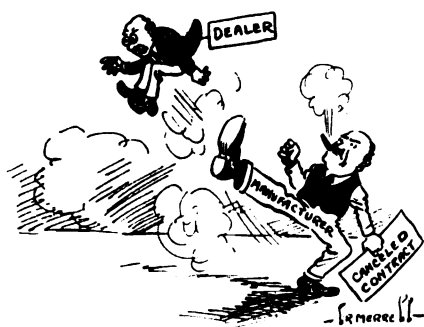
With these blue speed demons leading the way, it is expected that little time will be lost by the drivers and owners of the other fast race cars in filling out and sending in the blanks which will make them contenders in the three races for cash prizes totaling \$12,000.

The announcement of the Harvest Auto Classic was made recently by the Indianapolis Motor Speedway and the date set was September 9. The announcement was the first authentic information that fall races were to be held on America's first speedway, although it had been intimated earlier in the season that short races would be run. It had been planned to stage the events on September 4, but this date was not chosen on account of the fact that the Cincinnati speedway was to open on that date.

The cars will be eligible to compete in three events. The first on the program will be a 20-mile race; the second, 50 miles, and the third, 100 miles. It is probable that the latter event will make the winner eligible to the championship award of the American Automobile Association, as the parent body of the racing game has been asked to make the 100-mile race a championship event.

### REMEMBER.

There are three vital elements in vulcanizing—time, pressure and heat. If any one of these is wrong, there will be something lacking in the finished job.



new dealers contracted for more cars than we thought we could sell. They didn't sell them, either. That is the present status of the case.

"The retail dealer's business should be of a more substantial and enduring character. If our contracts may be revoked at will, what assurance can we give the banks that will secure a line of credit for us?"

"Arrangements between dealer and manufacturer should be more permanent and more businesslike.

"It takes a complete plant, a lot of time and a lot of money to sell cars and keep them sold.

"The real trouble is that manufacturers are volume crazy, with very few exceptions. They seem to regard this as their harvest time and certainly they are gathering in the golden grain, only in this case it is golden gain.

"We get lectures and preachments on how to become merchants and the fellows that had them out must have a hearty laugh at these jokes, for jokes they are. It is all good 'dope' for the dealer, but the factory don't live up to their preaching.

"Our contracts, admittedly, are the foundation of our business and they are insecure. How, then, can the business be made secure? We can endeavor to emulate the wonderful examples and precepts given but what will the effort bring us if our business can be taken away at the whim of the main office?"

"The manufacturer regards the country

# A Manufacturer's View of Dealers' Short-comings

SOMEWHERE, U. S. A., Aug. 9.—Editor RETAIL MOTOR TRADE JOURNAL: In pursuance of your request, I am pleased to take advantage of the opportunity to discuss the relations of the automobile dealer and the factory.

No one appreciates the chaotic condition of the retail branch of the automobile industry more than the factory sales department. The industry has grown so rapidly and has presented such an attractive exterior that slight attention has been given to the standardization of business policies and men of all sorts of character and business judgment, or lack of it, have been drawn into the business. Whereas, the complex problems arising in the trade demand men of strict integrity and business judgment, the men who meet these requirements, who are engaged in the retail automobile trade, are decidedly in the minority. It is assumed that this statement, without intent to cast unjust reflection, is too well understood to need proof.

In view of the conditions described, it has become necessary, from the factory standpoint, to institute such methods of distributing its product, and to provide such contracts, as will protect the factory interest, not as against the legitimate dealer of integrity and business judgment, but against the unscrupulous member of the trade. It is clear that the good must suffer with the evil, and because of the evil, until such conditions exist as will warrant or compel a revision of policies affecting contractual relations.

As a specific example, consider the much discussed deposit clause in the dealer's contract. That the factory does not depend upon this fund for substantial assistance in financing production is evident by the growing tendency to pay interest on the deposit. Furthermore, the total amount in hand is small as compared with the current per annum factory expense. It is now generally conceded that the purpose of the deposit is to liquidate defaulted parts accounts and transportation charges. There are numerous instances where the integrity of the dealer and his commercial rating are such that the factory assumes no risk whatsoever on open accounts. In such cases the deposit is a superfluous consideration in the contract. However, cases are equally numerous where it has been necessary to resort to the provision of the deposit clause in protection against countermanded orders and refusal to pay parts accounts as required under the terms of the agreement.

Again, consider the continually shrink-

ing territory lines, the basis of continual dissension between factory and dealer. It is generally admitted that the gross profit on car sales has a decided bearing upon the zeal and energy with which sales campaigns are pursued. This reflects the human equation more than good business judgment, perhaps. The smaller dealer takes greater pride in operating under a direct factory contract than under a sub-agency agreement, even though the gross income is not affected. This is true, even under the customary master contract arrangement where each dealer's discounts and rebates are alike. Further, the supervision of sub-agent's activities takes away from the attention which the master contractor might give to his retail field and therefore diminishes his gross income. It would seem, then, that there is no real objection to be raised when the factory, in pursuit of a program of continually increasing production, tightens territory lines and establishes direct accounts in districts which he believes deserve and require more intensified operations.

There are real problems of mutual and vital interest to the factory and dealer

that need prompt and careful consideration. How shall "service" be defined and what shall constitute a "standard service warranty," acceptable to factory, dealer and car owner? What shall be done respecting the commercial rating of the retail branch of the industry? How shall we arrive at a common understanding of contractual relations?

These and other questions are demanding answers and delay serves to continue and aggravate the noticeable, unsettled condition of the trade. All parties interested are to blame, in the sense that it has not been fully appreciated that any conditions or circumstances that affect the welfare of one, reflect in like manner upon the other.

If conditions can be brought about where there shall be a centralized administration of the affairs of the retail branch of the automobile business and this centralized power shall be such as to compel recognition in the councils of the industry, then much of the apparent selfishness shall be tempered, in a spirit of co-operation for a bigger and better business for factory and dealer alike.

Yours for the present.

ANON.

## KNOW YOUR NEIGHBOR.

(H. L. Fogelman, Official Lecturer, The Sheldon School, Chicago.)

Who is your neighbor?

The man living next door? Yes.

The man living in California? Yes.

The man living in Europe, Asia, Africa? Yes.

Everybody is your neighbor, no matter where he lives.

As a garage owner, your neighbor is not only the man who operates a garage in the same block or in the alley back of you, but every garage owner in Chicago, in Illinois, in the United States, is your neighbor.

What do you owe your fellow garage owner?

The very least you owe him is your deepest regard and respect and best wishes. Respect begets respect. Good wishes beget good wishes.

You owe him kind thoughts, true words, helpful actions. You owe him a boost whenever opportunity affords.

You owe him your absolute trust and confidence. Trust and confidence beget trust and confidence.

Distrust begets distrust.

You owe him your love.

Love begets love. Hate begets hate.

You owe him your association. Association means exchange of ideas.

Exchange of ideas means more money for you.

You owe him your presence at all garage owners' meetings. Your presence indicates on which side of the fence you are.

You owe him your closest fellowship.

Fellowship makes you a bigger man, capable of greater undertakings.

In short: Just what you expect of your neighbor, that is what you owe him.

You see, you are, after all, deeply indebted to your fellow garage owner.

You may not owe him money; but you owe him infinitely more than money. Give first your fellowship, companionship, communication, trust and confidence to your fellow man and you shall know your neighbor.

To know him is to respect, honor and love him.

Give these things and you will get his help.

Get his help and a harvest of greater success shall be yours.

## ONE CAR FOR EVERY THIRTEEN IOWANS.

Iowa now has 178,000 motor cars, one for every thirteen of population.

# Lubrication—A Problem in the Proper Care of the Car

"Must keep her old joints lubricated," said the motorist, "so you'd better throw a quart of oil in 'er, Bill."

Bill returned shortly with the oil and "threw it in."

"Anything else?" he asked.

"No, I guess not. The old boat is pulling hard. We don't get the mileage we did a few months ago," he complained.

"Why not have her overhauled?" said Bill, suggestively.

"Well, one of these days I will. Have to wait until I get around to it. The trouble is you stick a fellow too deep when you get a car in your shop," and the motorist threw in his clutch and drove away.

\* \* \*

Bill sauntered back to the repair shop. "I'll bet thirty cents," he observed to his partner, "that Gray drives that car until it won't go another mile. Then he'll bring it in here and expect us to put it in shape in about thirty minutes and kick if the bill is more'n a dollar six-bits."

"They most usually do," said his partner dismally. "What's wrong with his car?"

"Nothing, except it should be cleaned. Every bearing is gummed. The differential is clogged with grease and dirt. The crank case is filled with lubricating oils whose value was exhausted long ago. When that car goes to the shop for repairs a lot of new parts will be required for the old ones are wearing rapidly." Bill shook his head in disgust. The problem was beyond him.

\* \* \*

Bill, a doctor of motors, understands from experience that lubricants lose efficacy. He knows that some oils and greases give better service than others. He knows, and knows from experience, that where one automobile is ruined by the use of inferior oils, four to five are damaged by inattention. He knows that something more than lubricants are required to keep a car in first-class condition.

Some day after Bill has figured it all out he will hang a sign in front of his garage reading:

## LUBRICATION A SPECIALTY.

Just now Bill is a passive rather than an active factor in the care of automobiles. Machinery is his hobby and he would greatly prefer to have every bearing in first-class working order. When a

## A FREE SERVICE.

Arrangements have been perfected which will enable the Retail Motor Trade Journal to give information on any question pertaining to the proper lubrication of an automobile.

This question of lubrication is more important than you realize. If your customers have trouble on this score, if you encounter individual cases of inadequate lubrication, if there is any phase of the question on which you desire enlightenment, write us, giving full particulars.

**ON THE OTHER HAND:** If you have information of value to others, give your fellow laborers the benefit of your knowledge.

This is a new subject, one that is not thoroughly or definitely understood and one that demands and should receive your attention.

car comes in for repairs he tried to realize that ideal.

Being a physician, it is beneath his dignity to advertise for business. Business, he believes, should come of its own volition.

Some day, as before stated, he will cease to be a motor surgeon and become a business man.

Or, perhaps, he will adopt the Chinese method and be paid for his service as long as the cars are kept on the road, his pay to stop when the car is in the shop.

For Bill is beginning to understand lubrication has much to do with the service a car gives and that there is a great deal more to it than merely keeping oil and grease cups filled.

## Keep on the Safe Side.

As the first motorist you meet how often the crank case is cleaned and he will tell you he don't know or that it gets a cleaning whenever the car goes to the shop for an overhauling.

A man who knows something about lubrication said: "There is no oil made that should be put into a crank case and left there indefinitely. The old oil should be removed after a run of 400 to 500 miles, the bearing washed with kerosene, drained and the case refilled.

"In the interest\* of true economy the motorist always should keep on the safe side and not demand too great a service from his lubricants. A proper quality and quantity should be employed and changed at frequent intervals."

This advice was based on the theory that a lubricant is necessary wherever two metals are brought together in working contact. After a time the oil or grease gathers dust and retains the small particles of metal that are ground off and these, in turn, serve to wear out the bearing.

## Who Is to Blame?

No one portion or faction of the trade is wholly to blame. Perhaps an equal division of responsibility between motorist,

garageman and manufacturer of lubricants would be fair.

Car owners do not care to go to the trouble themselves. It is a dirty job to clean bearings and refill grease cups. Many important bearings are housed to protect them from dirt and some of them are beyond the reach of the owner.

Garagemen never have made a special study of this lubricating problem. The custom is to "throw in a quart of oil" when the owner gives the order. On an overhauling job the bearings usually receive attention.

Oil manufacturers are busy perfecting their product and marketing it. Their aim has been to produce an oil that will give the service expected, if used in the right way, but the user is left largely to his own devices to find the right way.

Motorists read of the wonderful qualities of an advertised oil, make a point to buy that oil and frequently are dissatisfied because the new, and we will say better oil, when mixed with a collection of inferior oils, dust, metal particles and carbon does not give the service claimed by the manufacturer.

## Proper Lubrication.

Interposing and maintaining a thin coating of oil or grease between bearing surfaces which prevents the actual contact of the bearings may be said to constitute proper lubrication.

Failure of the lubricant to follow a bearing may be due to two causes: The use of an unsuitable lubricant or the wrong application of a good oil or grease.

Methods of application and the care given are as important as the quality of the lubricant used.

A personal realization of these facts and of the importance of correct lubrication will do more toward lengthening the life of an automobile and decreasing the maintenance and operating cost than anything else, unless it would be the introduction of a metal that did not require lubrication.

### A Change Is Coming.

It costs money to buy, to operate and to maintain an automobile. The original cost plus operating and maintenance, added together and spread over the period the machine is used, will give the average annual cost.

Lubricants make up a small part of this total. But the lubrication of the car has much to do with the character of service secured, the life of the car and the satisfaction derived from its use.

Unfortunately, few motorists realize there is any connection between scored cylinders, worn bearings and gears, rattles, knocks, squeaks and the problem of lubrication.

They know it costs money to have bearings renewed, gears replaced, cylinders rebored, rattling and knocks eliminated, and they may think the periods for overhauling come around with alarming frequency, but they see no connection between the neglect of proper lubrication of the car and the results of that neglect.

Were automobiles a mere plaything, this oversight on the part of manufacturer, repairman and owner would be of minor consequence, but the automobile is a necessary part of modern commerce. It ranks with the telephone, the telegraph and the railroad.

### What Is Foreshadowed.

It is essential that the life of the automobile be prolonged, that the upkeep cost be reduced and the cost of fuel kept within reasonable bounds.

No longer is the automobile a plaything for thousands. It is a business and comfort necessity for millions.

The industry today is on the crest of a wave of individual industrial prosperity. Today it is not, generally speaking, a question of finding buyers for cars, but one of finding cars for buyers who have put up their money and are waiting impatiently for delivery.

Within a reasonable time the demand for automobiles will be satiated.

If the industry is not in better condition than now, only those concerns whose business is firmly established will weather the storm, and they will have a keen appreciation of the extent of the gale if they ride it out.

### Back to Lubrication.

Lubrication merely is one phase of the big problem before the automobile industry. Its importance is realized by few. The effects of lack of knowledge and its use are felt by all.

Apply the case in this way: If you had a split bearing in your car, you would remove it, or have it removed, and a perfect bearing substituted. You know what the sharp edges of a split bearing will do to everything with which it comes into contact.

Examine lubricating oil with a powerful microscope and you will find it made up of globular particles. In time these

minute globes lose their shape, their elasticity and power to become perfect globes, and should be discarded just as the broken bearing is thrown away.

The whole problem of lubrication is to use a proper grade of oil, to apply it in the proper manner and at such intervals as circumstances require.

How to meet conditions here outlined is a question that requires thought, time and hard work to handle.

### Lubrication the Correct Way for Motor Car Use.

BY W. D. SIMMONS,

President Viscosity Oil Co., Chicago.

The subject of lubrication is one that requires an extended and searching study and is not easily understood by the layman, as it is absolutely necessary to know of the many conditions that render lubrication necessary in order to pass intelligently on the subject.

Variations in conditions, whether of speed, pressure, temperature, form or material, demand for greatest efficiency correspondingly different lubricants. The imperfections in the rubbing surfaces of machinery constitute the basis of the difficulty. Perfect smoothness is not attainable. The inner surfaces of bearings, the inner surfaces of cylinders, however smooth in appearance, have indentations and elevations caused by the pores of the metal, which cannot be made perfectly smooth with the finest cutting tool ever manufactured, and unless a medium is inserted between the surfaces of the bearing or the surfaces of the valves and cylinder that will fill the indentations and positively prevent the metals from coming in contact with each other, the largest percentage of power created in an engine will be expended or wasted in running itself. The same principle applies to all the bearings or journals throughout the motor or chassis.

The imperfections of machinery interfere with the effective transmission of power. The conditions are varied, rendering necessary the manufacture of a multiplicity of grades of oil, each differing in consistency and character from all the rest, to suit the work for which it is expected to perform, and unless the buyer of oil knows what kind or consistency to select, he might better place himself in the hands of someone in whom he has confidence and be guided in his purchases by a better informed judgment.

### Carbon.

Carbon is an excellent thing in coal or gas. But when it is too conspicuous in your automobile oil the intense heat of your motor crystallizes it into little, hard, diamond-like particles, which may get in between the piston and cylinder wall and scratch, dig and scar it all up, or these crystals may gather in the head of the

motor and choke it up or cut off ignition.

So the problem lubricating experts had to solve was to make an oil in which the burning point was so high it would not be affected by the heat of the motor.

A motor oil is now made which maintains a constant film between the moving parts of a motor without breaking or running off; which stands the intense heat and prevents carbon trouble and increases mileage by reducing friction.

There is more about oil you lubricate your motor with than you have any idea. Making oil is not just mixing some things together. It is a science, and in the manufacture are used unique pieces of machinery and mechanical devices.

By using the best grade of automobile oil obtainable the efficiency of your motor can be kept the highest.

### Function of the Lubricant.

Lubrication has become an exact science. It is not a problem that can be handled by hit or miss methods, a fact now recognized by all motor experts.

Today's motor is a highly organized piece of mechanism—it must work hard and fast. For example, the space between the interior cylinder surface and the piston is 1/1,000 of an inch, yet the lubricating oil must creep between these two swiftly moving parts, maintaining a thin, cool film and one that will not carbonate under the intense heat of the motor.

Mere oil will not do. It must be fine enough to work into this minute space, tough enough to cling together in a film under a terrific squeezing pressure, and it must withstand high heat without carbonizing or evaporating. In order to secure the highest point of efficiency from lubricating oils a study of their application is necessary. The velocity, load and heat of a machine, and many other details peculiar to the conditions under which the machines must work, should be determining factors in the composition of the oil.

Among the biggest items in the upkeep of a motor are worn pistons, piston rings and carboned cylinders. These are due entirely to improper lubrication. The ordinary heat of a motor is estimated at 350 degrees. Many oils carbonize as low as 365 degrees, giving a margin of only 15 degrees. A slight overheating of the motor will mean that the oil carbonizes and the reason for the big repair bills for worn pistons, piston rings and scored cylinders is self-evident.

In the early days of the automobile not much attention was paid to the various kinds of lubricating oils that were demanded for this work. People thought that almost any oil that they would use for other uses would do for this. But they soon found they were mistaken. And now the business of making proper lubricants for the various needs of an automobile has become a science in itself.

# A Business Necessity— An Adequate Accounting System

## STORAGE DEPARTMENT ACCOUNTING.

It is not surprising that the majority of garage men know practically nothing about their costs, and hence in which departments of their business they are making and in which departments losing money.

The term "garage" is coming to be universally applied to the combined automobile agency, storage, repair and supply business. It is in this sense we use the word.

The garage, then, from an accounting standpoint is a combination of a real estate, a manufacturing and a merchandising proposition. The sale of automobiles, new and used, involving the ancient practices of barter and trade; of gasoline, tires, parts and accessories, each line presenting its own problems of management, of selling, and of accounting, would seem to be difficult enough. Add to this the manufacturing problems of the repair shop—the handling of labor at a profit—and the problems of factory cost accounting there presented; then on top of all this the storage problem—sub-renting space with a certain amount of SERVICE at a profit (?)—no wonder the ordinary bookkeeper, with experience usually limited to one line, seldom makes an attempt, and when he does usually makes a mess, of garage department cost accounting. Even those posing as experts and writing articles on the subject for some of the leading garage journals frequently exhibit a ludicrous and lamentable lack or grasp of the fundamental principles involved. Two such instances have only recently come to the writer's attention.

### Storage Department Problems.

In the present article we purpose dealing with the storage department problems.

We have already said (if the type-setter followed copy) that in the storage department the garage man sells space and SERVICE. He spells it that way so he can make the "space" as small as possible and the "SERVICE" as effective as possible—in putting the dollar sign into \$storage. The wise ones have found that SERVICE is the *only thing that will do it*.

The actual recording of storage department charges is perhaps the simplest of garage accounting operations. Probably in the majority of cases the bookkeeper or proprietor, who knows perfectly well what customers have cars in storage, goes through the customers' ledgers at the end of the month and makes an entry like this: "1 month's storage, \$6.00," on each account that should be charged. That's

## A MONTHLY FEATURE Conducted by Horace Edward Hollister Rockford, Ill.

all there is to it. Of course such a procedure is not at all "according to Lioble"—no entry should ever be made in a ledger account without first making a journal entry of the item. Without strictly observing this rule, no system of double-entry bookkeeping can be properly carried out. Hence an entry should be made in the general journal of the total storage charges for the month, and an itemized list of the individual accounts charged should be retained in some form until the books are balanced for the month at least. The general journal entry should appear as follows:

Accounts receivable (sundry) .....	\$600.00
To sales (live storage) .....	\$400.00
To sales (dead storage) .....	200.00

### Storage Charges for the Month.

For the garage man who desires complete and accurate records we suggest a card storage register, such as is illustrated in Form 1. This card provides an exceedingly convenient and valuable permanent record of storage customers, and basis for compiling the monthly charge. It should be filled out as completely as possible when the car is received, and filed in the card cabinet alphabetically under owner's name. At the end of the first month charge the customer for the portion of a month that has expired since the car was entered for storage; thereafter for each calendar month. Each month as the cards are gone over in making the charges to customers' accounts, after entering the amount in the ledger, turn the card over and make a memorandum of the charge having been made on the back of the card, thus: "7/30—\$6.00." After finishing the posting add up these amounts on the adding machine or a sheet of paper to ascertain the total amount for the general journal entry. When a car is withdrawn make memorandum of the fact in the proper space on the face of the card, with reason for withdrawal, and replace it in the current file until the month's end. After making the final charge and the books have been balanced for the month, so that there is no further chance of needing to check the month's charges, take out the cards covering withdrawn cars, and, after making a memorandum, if not already made, of the sales (supplies, accessories, etc.) and credit record of the customer, place in a

transfer file of ex-storage customers. Many being "out" temporarily—for the summer, perhaps, or a trip—will be back if solicited at the right time in the future by Mr. Johnny-on-the-Spot. And if you're not there, Mr. Johnny-on-the-Spot probably will be, and you'll have lost a good customer. This is Method and System, otherwise known as "working above the ears."

### Transient Cash.

For that other, and properly most profitable end of the storage business—the transient cash customer—the use of the triplicate storage tag reproduced herewith as Form 2 is desirable for several reasons. Properly filled in when the car is left in the garage, it supplies a memorandum for the office of the departments in which charges are going to accrue against the car, as well as a tag for the car itself and a claim check with a plain statement of the storage rates and any other information desired printed thereon for the customer.

My friend, Derthbold, of Fedora, who has recently moved into his splendid new garage building in which the distances are so magnificent that one really needs a flivver to go from one department to another, said to me the other day: "Hollister, I had a man in here today who had \$1.40 worth of gasoline and oil put into his car, bought \$3.25 worth of accessories in the storeroom, had a repair bill of \$8.25, storage 75 cents, and borrowed a dollar change from the cashier. When he was ready to leave—in a hurry as usual—we got all the charges together except the \$1.40 for gasoline and oil, the charge slip for which had not reached the office. He paid the bill, and when he was climbing into his machine my floor manager came running up to tell the bookkeeper about the charge from his department. We had to subject the customer to the annoyance and ourselves to the embarrassment of following him out to his machine to collect the balance—or lose it. Something's wrong with the system. What shall we do about it?"

### Tagging Cars.

I replied: "Why not tie a tag to the car when it comes into the garage and make it a high crime and misdemeanor for any employee to fail to make memorandum on the tag of any service rendered or merchandise supplied?" "That's the stuff," said Derthbold. "I'll tie on a dozen tags before I'll let 'em get out without paying their charges." "One tag's enough," I replied; "but establish the routine and insist on its being carried out in every case. These fixed methods of



procedure that sometimes seem unnecessarily complicated and burdensome and are therefore often slighted are the bolts and nuts that hold the human cogs of your business machine together, and prevent lost motion and wasted effort."

But what about figuring the profits in the Storage Department? Is there "any sich animal"?

The reason most figures are wrong on Storage department costs is because they stop at the surface of the ground. The garage man pays, or should charge himself if he owns the building, a fair sum monthly as rent; a car in storage occupies a certain number of square feet, averaging about 112; the natural conclusion is that rental cost of the space occupied is the proper cost of storing the car. The man who figures thus forgets the ancient principle of common law that title to property—owned or rented—extends from the center of the earth to the

in the same way. But what of the overhead? *What* is the overhead on storage, do you say? Well, there's taxes and insurance—not on the building, which is usually included in the rent—but on or *covering* all the contents of the building—hence "overhead"; thickest where the most value is, but applying proportionately to anything of value in the storage department. These two items should be divided among the departments in proportion to the value of the stock and equipment in each.

#### Labor on Storage.

A certain amount of garage labor is applicable direct to the storage department as non-productive or overhead labor. Included in this would be time of the employes devoted to handling cars, cleaning cars and floor, etc. Whatever service is given with the fixed storage charge is a part of the overhead. The proportion of the men's time charged for

partment. The latter method arbitrarily shows a profit in each department and defeats the very object of department cost accounting.

The writer, in his book, "Practical Garage Accountings" suggests a method for distributing garage general overhead by a process of *averaging* the various elements entering into the problem, which he believes to be the only scientific method yet brought forward for the purpose. The only objection that has been urged against it is that it is a little complicated, involving, as it does, perhaps an hour's figuring each month.

#### A Simple Method.

In the interests of simplicity we here present a modification of the method referred to that we believe will be sufficiently exact in almost all cases.

I. Find the percentage of each department's sales for the month to the total

OWNER		REGISTER NO.
ADDRESS		L. or D.
DESCRIPTION OF CAR		RATE
MAKE	MODEL	Per Mo.
LICENSE NO.	OTHER DATA	
PREVIOUS NO.		
RECORD		
IN	191	OUT 191
REASON WITHDRAWN		
SALES AND CREDIT RECORD		

Identification Tag No. **523**

#### BAER'S GARAGE

100-7-11 W. Fourth St.  
CHICAGO, ILL.

DAY STORAGE RATES  
4 Hours or less ..... 35c  
Each hour thereafter ..... 60c

NIGHT STORAGE  
6 p. m. to 9 a. m.  
Per Night ..... 6.75  
- Week ..... 2.50  
- Month—live ..... 8.00  
- Month—dead ..... 4.00

Fire Proof Garage  
Night Washing a Specialty

We are not responsible for loss or damage by fire or theft of vehicles and accessories left with us for sale, storage or repairs.

Date In _____ Out _____ No. <b>523</b>		Date In _____ Out _____ No. <b>523</b>	
A. M.	P. M.	A. M.	P. M.
IN	OUT	IN	OUT
1 Name	1	1 Name	1
2 City	2	2 City	2
3 Car Name	3	3 Car Name	3
4 Storage	4	4 Storage	4
5 Washing	5	5 Washing	5
6 Polishing	6	6 Polishing	6
7 Gasoline	7	7 Gasoline	7
8 Oil	8	8 Oil	8
9 Tires	9	9 Tires	9
10 Tubes	10	10 Tubes	10
11 Tire Repairs	11	11 Tire Repairs	11
12 Supplies	12	12 Supplies	12
13 Labor	13	13 Labor	13
14 Car ready at	14	14 Car ready at	14

sky. Hence he forgets to look for the *overhead* above the space he sub-rents to his customer.

#### Overhead on Storage.

The cost of the space occupied by the car is certainly the primary cost of storage sold. Added to this is the proper proportion of the rental of entrances and passage ways, which should be divided up among all the cars making use of them. Then there's the office space, a portion of the cost of which certainly applies to every space rented and accounted for in the office. How, then, shall we figure space cost?

The simplest and at the same time a perfectly correct method of doing this is to disregard all space not occupied for productive purposes, and apply the rent to the productive space pro rata. This will automatically take care of the non-productive space in proportion to the space actually occupied by each department. In "productive space" we include, of course, the salesroom as productive space of the new car department, the repair shop space, the washrack, etc.

This disposes of the rent, and the cost of light and heat should be distributed

or used in filling gasoline or oil tanks should be charged as productive labor, or to the gasoline and oil department.

The most difficult part of the overhead to fairly divide up among the departments, however, is the administrative or general expense. The proprietor's or manager's salary, office employee's wages and other office expenses and general expenses applying equally to the whole garage, how shall they be fairly split up to charge each department its proper proportion?

It would not be fair to do so on a basis of space occupied—the storage department would get entirely too much. It will not do on a basis of value of equipment—that would be too easy on the storage department. Nor in proportion to the volume of sales—the new car department would be unjustly discriminated against, for its volume of sales is usually greatest, while it creates by no means the largest amount of office work and expense. Nor can you consider the whole garage as a factory and charge overhead on the basis of labor hours in each department. And it is an absurdity to apportion it according to the gross profits of each de-

sales by dividing the departmental sales by the total sales. For example:

New car sales.....	\$ 5,000.00	50%
Used car sales.....	2,000.00	20%
Parts and accessories.....	500.00	5%
Tires and tubes.....	700.00	7%
Gasoline and oil.....	300.00	3%
Wash rack.....	100.00	1%
Storage department.....	500.00	5%
Car repair department.....	800.00	8%
Tire repair department.....	100.00	1%

Total month's sales.....\$10,000.00 100%

II. Distribute all labor—productive and non-productive—by departments on the payroll. Find the proportion of the labor-hours of each department to the total number of hours. Include in this calculation any employee salesmen's time in any department, but *not* the proprietor's, general manager's, or the office force's. Thus:

New car department....	250 hours	10%
Used car department....	200 hours	8%
Parts and accessories....	150 hours	6%
Tires and tubes.....	50 hours	2%
Gasoline and oil.....	150 hours	6%
Wash rack.....	200 hours	8%
Storage department....	150 hours	6%
Car repair department....	1,250 hours	50%
Tire repair department..	100 hours	4%

Total ..... 2,500 hours 100%

III. Average the two sets of percen-

tages ascertained as directed under I and II, as follows:

New car dept.....	50+	10=	60÷2=	30%
Used car dept.....	20+	8=	28÷2=	14%
Parts and accessories .....	5+	6=	11÷2=	5½%
Tires and tubes.....	7+	2=	9÷2=	4½%
Gasoline and oil...	3+	6=	9÷2=	4½%
Wash rack.....	1+	8=	9÷2=	4½%
Storage dept.....	5+	6=	11÷2=	5½%
Car repair dept....	8+	50=	58÷2=	29%
Tire repair dept...	1+	4=	5÷2=	2½%

Totals .....100+100=200÷2=100%

Now distribute the Administrative or General overhead to the various departments on the basis of the average percentages thus ascertained, and in the large majority of cases it will be recognized as a just as well as logical division of these expenses.

Still another classification of overhead is the sales expenses. These are estimated bad debt loss, credit and collection

expense, as well as actual selling expenses, including general advertising. These should be distributed on the basis of volume of sales, excluding cash sales in figuring distribution of estimated bad debt losses and credit and collection expense, and including all sales in distributing the balance.

Of course all department expenses that can be charged direct to the department should be, including depreciation on its equipment. These various expenses should be charged off monthly—the estimated provision for bad debts, insurance, taxes, depreciation, proprietor's salary, etc. The sales, expense and cost of sales (or cost of goods sold) figures should be assembled at the end of the month, the expenses distributed to each department as outlined above, and the net profit

or loss of each department ascertained.

While the process may seem difficult and complicated, it will be found to be much easier in practice than it seems in reading the description of it. A single sheet of columnar paper, 8½x20 in., is large enough to contain all the distribution figures, with a few sheets of scratch paper for figuring. Any bright bookkeeper can readily perform all the necessary calculations in three or four hours each month after the routine has been learned.

Is it worth while? Emphatically yes. It relieves the garage executive of the strain of uncertainty, unfailingly reveals the weak spots in his organization, shows up the hidden leaks, and very frequently places in his hands the information needed to turn failure into success.

## Pertaining to the Sale, Care and Repair of Tires

### TIRE CONDITIONS THAT EVERY AUTOMOBILE OWNER SHOULD KNOW

Tires, like the engine or other parts of a car, require a reasonable amount of attention and care if the owner expects to secure the best results. There have been many refinements in the construction of tires and those built with quality for a base are very dependable; in fact, the motorist ordinarily places so much confidence in the tire equipment, sometimes unconsciously, that the tires do not receive the frequent inspection and attention that is considered necessary for the car.

Should the engine overheat and the bearing burn out, due to lack of lubrication, the result would not be considered an evidence of mechanical error; it would be properly chargeable to oversight and neglect.

It is not always possible to avoid stones and other sharp objects, ruts and severe road conditions and I shall not attempt to define certain rules or offer impracticable suggestions to be followed in using tires. It is the privilege of the purchaser of a tire to use same according to his own ideas, but I believe that with more information relative to tire conditions and with frank, friendly advice regarding the causes, remedies, etc., it will be possible, in many instances, to increase the service and decrease the annoyance and expense. Quality alone whether it pertains to tires or car, will not insure the greatest efficiency, but a combination of quality and proper care will result in satisfactory service at a low cost of maintenance.

I have prepared this series of articles in connection with tire usage with a feeling of real interest in the service and

### THE CARE AND REPAIR OF TIRES.

A series of valuable and instructive articles concerning tire usage, together with remedies for reducing tire expense.

By R. J. Firestone,  
Sales Manager,  
Firestone Tire & Rubber Company.

pleasure of every car owner. Technical terms have been avoided and an effort made to discuss these subjects in an easy, clear manner so that same will not be difficult for the layman to understand.

#### Selection.

The application, care and usage of tires, are necessary things to consider, but it is essential to good service that the correct type and size be adopted. Car construction, power, lateral strains and traction strains to the tires must be kept in mind when deciding upon diameter and cross section of tire equipment, but the weight of car is probably the most important thing.

The weight of the car can be ascertained by running the front half of it on platform scales, then rear half, and the weight carried by each tire will be one-half of the respective amounts. Middle of wheel base will be the weight dividing point between the front and rear halves of car. The approach to the scales should be level and, if reasonable care is exercised, the total of the two operations will be within twenty or thirty pounds of the weight of the car when all of it is upon the scales.

#### Tire Types.

Much delay and annoyance can be avoided, when ordering new tires by

specifying the style. Regular clincher cases have stretchable beads and are designed for use on regular clincher (one piece) rims; they are sometimes used also on quick detachable clincher rims. When used on regular clincher rims, it is desirable for sizes including the 4-inch and above, to use clips or stay bolts to hold beads securely in rim clinches. When using clincher tires on quick detachable clincher rims, it is necessary to use flaps to protect the inner tubes.

Quick detachable clincher cases have non-stretchable beads and can only be used on quick detachable clincher rims and the split type of clincher rims. This style of tire should always be equipped with flaps.

Straight side or straight bead cases have non-stretchable cables imbedded in the base and are designed only for quick detachable straight side rims and split type of straight side rims. This style should always be equipped with flaps. Straight side tires are sometimes used on quick detachable clincher rims having filler beads fitted in clincher of rims. This is not to be recommended, however, as the base width of this style of rim is not suitable for straight side tires.

#### Overize Tires.

Weight and distribution of car, power, gear ratio, speed and other points are considered by the car engineers and tire makers in determining the tire sizes necessary for equipment. It will be appreciated, however, that the usage of cars will vary on account of road conditions. Therefore it is reasonable to expect some trouble from the tires on a small percentage of cars, even though the equipment on a majority of the cars proves satisfactory in every respect.

When tires are loaded beyond their

normal carrying capacity, the fabric is not only strained but develops more hinging action and heat at edges of tread. The materials employed in the manufacture of tires are limited in strength, like other articles, and when taxed beyond that point will not be efficient.

Oversize tires were primarily designed for the exceptional hard service but have come into general favor because of extra strength, easier riding cushion and longer mileage, in fact, experienced car owners specify the oversize tires, in many instances for original equipment of new cars. The resiliency of larger tires reduces the traction slippage on rear wheels, adds to comfort and lessens vibration to the mechanism of the car.

When oversize tires are placed on front wheels that were originally equipped with regular size tires, the overall diameter will be increased approximately one inch and the speedometer should be readjusted, otherwise the mileage recorded will be less than that actually traveled.

There is not enough added weight in oversize tires to affect transmission or differential or make any objectionable difference in the power. The advantages of oversize tires, without the inconvenience or expense of changing wheel equipment, are features which mean more safety and pleasure to motorists.

#### Application.

Before applying tires, remove rust and all other foreign matter from rims. If tires have been ridden deflated at any time, mud may have accumulated on rims and, unless it is removed, the tires cannot seat or fit properly. The danger of pinching inner tubes can be reduced, to a minimum, by dusting soapstone or powdered mica on the rims, so that the tire beads will slip easily into the correct position.

Inflate inner tubes just enough to round them out before placing them inside of cases. Do not use tubes of the wrong size and be sure that the valves are equipped with spreaders adapted to the particular type of cases used, for instance, clincher, quick detachable clincher, or straight side. Valves in Firestone tubes, by the way, are equipped with universal spreader and therefore suitable for use in all three types. Dust the inside of the case and the inner tube with powdered mica or talc. This will reduce friction and prevent adhesion of tube to case after being heated in service.

When the tires have been removed for any reason, it is a good plan when reapplying, to reverse them, that is, to place the worn sides of the tires toward the car. It is not generally known, though it is a fact, that almost all the side wear to a tire occurs on the side from car. This is due to road construction, rut wear, curb scraping, etc.

#### Misapplication.

Careful application of tires is quite so necessary to good service as the selection of correct size for load, or rims being of right design and regular in measurement.

Straight side tires are sometimes used on clincher rims and in such instances, filler beads should be fitted in the rim clinches to prevent side walls of tires from being chafed and gouged by rim clinches. To avoid, as much as possible, the tendency for straight side tires to lift up from rims at inner edges of cables and in this manner permit a rolling action sideways, it is considered advisable to have more spread between the cables than is necessary with the beads of the clincher type. The use of straight side cases on clincher rims is therefore discouraged. If best results are to be expected from straight side tires they should be used only on straight side rims which are slightly wider at base and permit of the necessary spread between cables. If, for some special reason, it is desired to use straight side tires on clincher rims, the rims should be always equipped with filler beads.

Some tire users do not realize the importance of using flaps, and others, due to indifference or carelessness, place the tubes above the flaps. Injury may be expected when the flaps are not used as intended.

Users of quick detachable rims having reversible rings should be very careful that rings on both sides are suitable to accommodate the type of tire applied, i. e., when using clincher tires, both rings should be in position to properly engage beads and if straight side tires are to be used, both rings should be in position to fit the straight beads or straight sides of this type.

It probably is not necessary to give detailed reasons pointing out why a tire should be properly fitted and these hints are intended more as a caution against hasty or careless application.

#### A TIRE TEST.

S. B. Stevens, who made the record trans-continental run, was especially enthusiastic over the record made by the Silvertown Cord Tires with which the car was equipped. The distance between New York and Omaha is 1,455 miles, and was covered in 48 hours without a bit of tire trouble. The same set of tires was used as far as Cheyenne, where they were changed as a matter of precaution. The tires, however, according to Mr. Stevens, showed almost no wear whatever. He attributes a full measure of the success of this trip and the remarkable time made to the resilience of the tires, which increased the engine efficiency of the car to a marked extent, aside from the freedom from tire trouble which is always the jinx of speed records.

#### SELLING TIRES AT A PROFIT.

By C. B. WOODWORTH.

Leather Tire Goods Co., Niagara Falls, N. Y.

Dealers and garage men in most large cities have found that there is little or no profit in selling tires. In most large cities it is a regular practice for dealers to handle tires on a margin of 5 per cent, which is not enough to pay for the cost of doing business.

It is practically impossible to make a larger profit than this on the standard makes of tires for most customers know that if one dealer will not sell them tires at cut prices another will. The only way to meet this condition is for the dealer to handle a tire which none of his competitors are handling and which is in some way different so that they cannot offer an exact substitute at a cut price. Practically all of the standard makes of tires are considered by most purchasers to be of about equal value and if an attempt is made to maintain the price of one particular make the customer simply buys one of the other makes of about the same grade on which he can get a cut price.

Some dealers in an attempt to make a living profit handle a cheap grade of tire which they can sell at as low prices as their competitors are quoting and still make a good profit. This, however, is not especially satisfactory for the cheaper grade tires generally give very poor service and the result is a dissatisfied customer and a loss of prestige to the dealer.

Another way to meet the condition is to handle a tire of better grade than the ordinary, carrying a better guarantee and if the dealer happens to be the only one in his town who can supply this tire, he is generally able to make a fair profit on it and the tire being better than the customer has been accustomed to using, he is generally very much pleased. It is, however, some times very difficult to convince a prospective customer that the higher price tire is worth the extra cost and unless there is something about the tire different from others that is readily noticeable the customer will often refuse to buy for fear he may be paying a high price for a tire that is no better than he has been accustomed to buying for less money.

#### "FOR ADVERTISING."

Naturally a company as conspicuous in the tire industry as the Goodyear Tire & Rubber Company is a target for the thrifty motorist, who, after having obtained unexpected mileage from his tires, is perfectly willing to return them "for advertising purposes," in exchange for new ones.

The Goodyear office was refreshed the other day when a new and original species of appeal for free tires reached

them from a minister "somewhere in California." His letter follows:

I find myself figuring that you owe me at least one tire, size 30x3½, for advertising work.

Unusual, eh?

Well, this is the case. You flooded the country with an unusual advertisement, entitled, "Protect Our Good Name." The subject matter in that ad was so excellent that I scented a suggestion for a Sunday sermon. I carried the ad with me to the pulpit, read it, and then proceeded to apply the lesson in this fashion that if a great commercial firm was so careful about its name, surely we, as Christians, ought to show equal diligence, etc.

Well, one man bought a set of Goodyear Tires as a direct result of that service,

free of charge to compensate for the delay, losing the price of the article as well as making a bad impression on his customer

Many a motorist gets stuck on the road and has to send for help, where a hook-hold boot or some other accessory might help him on his way in a few minutes—if he had it—and the reason he doesn't have it is because he never thinks of it. He is like the man whose roof leaked. When it rained he couldn't fix it and when it wasn't raining he didn't need it fixed.



though he said he intended buying another make.

Can you see my point?

As I finish this letter I am not quite sure but that I should have asked for an entire set instead of one tire.

Name given on request, as the medicine ads say.

### NEAT ACCESSORY DISPLAY CASE.

Tire accessories are small items and are apt to be considered unimportant by the tire dealers. These are usually looked upon as the all important articles. There is a good profit in tire accessories, if they are sold, but not if they are tucked away in an obscure corner where automobile owners never get sight of them.

It often happens that an automobile owner goes into a store or garage and asks for a hook-hold boot, a can of patches or something of the sort, and the dealer says, "Yes, I think we have them," and then proceeds to hunt, under the counter, behind this and that, and eventually hauls out a dusty relic from some-

Tire accessories neatly displayed will sell themselves, and do the customer a service by bringing them to his attention.

In order to encourage dealers to display accessories advantageously, the Miller Rubber Company is supplying their dealers with classy display cases, free of charge with a small order for accessories.

These silent salesmen are made of 20 gauge cold rolled steel, and are finished to represent mahogany. The glass front protects the contents so that the accessories are always clean and fresh.

The lower part is arranged for storage space for extra accessories, and a tight metal door keeps out dust and dirt. They stand about 26 inches high by 24 inches at the base. Just right for a counter display.

### UNDER-INFLATION.

These are the days when a belief that tires must be run under-inflated in hot weather costs motorists a lot of money. It is surprising to find that many men

still believe that hot weather expands the air in a pneumatic tire to the bursting point. There is nothing to the belief worth considering.

In fact, so far as net results are concerned, the reverse is true. A great many tires are injured and even ruined in hot weather by injuries to which they are made victims through under-inflation.

The Goodyear Tire & Rubber Company has conducted many tests to determine how much the air in a tire expands because of heat. Tires have been inflated to all manner of pressures. The cars with them as equipped have been run over the hottest of pavements, and sand and dirt roads, at high speeds and slowly. And pressures have been recorded and compared before and after each test.

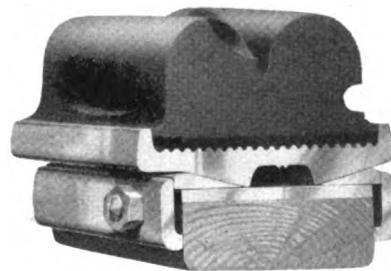
These tests have proved that no tire—no Goodyear Tire at least—is in danger of a blowout because of hot weather expansion of the air, when tires are inflated to the recommended pressures. Any motorist can conduct this test for himself, if provided with a pressure gauge.

Inflate your tires to the recommended pressure. Note the pressure on the gauge. Ride 1 mile or 5 miles, or any other distance; stop and apply the pressure gauge and then compare your figures. You will quickly see that the difference is so small that there is no danger of a blowout.

### TRUCK TIRES.

What type of tire should I use on my truck?

It all depends, of course, upon the service expected. Tires are the shoes for motor vehicles and demand the same degree of care in their selection as you exercise in the purchase of your own shoes. The dancing master, policeman,



sportsman and working man must have shoes, but no type or weight produces satisfaction for all of them, so each selects the type best suited to the service expected. Likewise in the selection of truck tires—the service expected must govern the type selected.

Generally speaking, if speeds over 25 miles an hour are required, pneumatics are recommended. For heavy-duty, slow-going trucks, use solid tires, making due allowance for local conditions. On light delivery trucks the Goodyear Motz Commercial Cushion Tire is rapidly growing into favor. Next to air, it provides the best cushion for both truck and load. It

where, and presents it to his customer is the intermediate type between the pneumatic and the solid, and its field is broadening constantly. Motz Tires permit speeds up to 25 miles an hour which

insure quicker deliveries and a wider territory covered.

Motz users average 10,000 miles per tire. Many report service of 12,000 to 18,000 miles—some have attained 35,000

miles. That this type of tire is reaching a wide field is shown by the fact that Goodyear Motz business this year has increased more than 100 per cent over the same period last year.

# Pointers on the Removal and Replacement of Tires

## HOW TO TAKE OFF A TIRE (CLINCHER TYPE).

**Caution:** After jacking up the car, never place your hand or foot where either could get caught if the axle should slip off the jack.

Take off the dust cap barrel.

Take off the collar that screws down against the wheel rim.

Take off the small dust cap.

If any air remains in the tire, deflate it by unscrewing the valve core plunger. Now take a tire iron and start on the opposite side of the wheel from the valve and pry the tire away from the rim and up over it. Work it both ways back to the valve stem, being careful not to let the tire slip back to its place. Push up the valve stem. You can now pry the rest of the tire loose. At this stage, one complete side of the tire should be free from the rim. Remove the tube by inserting the hand in the casing and pull up and out on the valve stem; much trouble may be experienced right here, owing to the different lengths of valve stems used by different manufacturers. We are expert tire men and we have sometimes worked fifteen minutes taking out a tube. Do not lose your temper, as it does not in any way aid you, and will only cause a loss of time. After the tube is out, pull or push the inside rim of the casing to the outside rim of the wheel and go through the same operations in getting this side of the tire off. In some cases it may not be possible to remove the tube until the whole casing is off.

The clincher type is the most difficult of all to take off and put on; for this reason, a clincher tire over 3½ inches is seldom made.

### How to Put on a Clincher Tire.

Be sure, if possible, that the wheel is clean and free from mud and dirt. What we wish to emphasize is the fact that a few minutes' work now cleaning the wheel, if necessary, will probably save you several hours later on. We are assuming that you have plenty of time and want to put this tire on in the most workmanlike manner possible. Have the wheel clean, so that by no chance can any dirt drop into the casing. Be sure that the inside of the casing is well coated with powder (talc or soapstone), so as to prevent the tube from sticking to the casing. We shall explain the

In 1914 J. W. Hayden of the Cambridge Garage, Cambridge, Wis., put out a booklet entitled "Tire Economy," which contains a great deal of valuable information and would prove an excellent advertisement for the business builder, who has an eye on the future and consideration of the interest for his customers. One department of this book deals with the installation and removal of types of different tires and this is reproduced:

process of this operation in another place.

Not one amateur or owner in a hundred does this correctly and not one garageman in ten takes the time to do it properly.

Put the tube in the casing; then inflate it enough to take all the wrinkles out of it. Turn the wheel so that the valve stem hole is on top. Put the valve stem through this hole, keeping the inside bead of the casing as close to the outside rim of the wheel as possible, then start to force the inside bead of the casing over the wheel rim, working both ways from the valve stem. Be careful not to punch a hole in the tube.

Do not use a screwdriver, but purchase a pair of the best tire irons obtainable, as they are the cheapest in the long run. Buy only a plain tire iron, not one with any other tools combined with it.

After you have the inside bead over the rim, take a last look at the tube and make sure it is not pinched anywhere. It should be full, smooth and without wrinkles. Don't put too much air in the tube at this time or you will have trouble getting the casing on the rim the same as before, working both ways around from the valve side. Start to inflate the tire, making sure that the valve stem is free and down as far as it will go. Watch carefully to see that both beads are entering the clincher rim of the wheel; if not, strike sharply with the hand or lightly with a wooden or rawhide mallet. Do not use a hammer. In some cases it may be found necessary to leave the tube out until the inside rim of the casing has been forced over the wheel rim. Inflate the tire to full pressure.

### To Remove a Quick-Detachable Clincher Type.

Take off the dust cap barrel.

Take off the collar that screws down

against the wheel rim.

Take off the dust cap.

If any air remains in the tire, deflate it by unscrewing the valve core plunger. Push up the valve stem. You should now be able to disengage the rim that locks at the valve stem. If two separate rims are employed here to hold the tire in place (and this is the latest construction), remove the outside one entirely before attempting to remove the inner one. When both rings are off, pull the whole tire towards you; begin opposite the valve stem and gradually work around both ways. The tire should move easily across the rim unless rusted and burned into place, in which case much patience must be exercised in forcing the tire from the outside rim, inch by inch, with a tire iron. We have frequently spent half an hour removing one side of a badly stuck casing. Special tools are manufactured for this very purpose. Once free, it will come off easily, if taken completely free from the rim at the side opposite the valve stem. Sometimes it is easier to remove the tube after the outside rim is free before attempting to free the inside rim.

At all times great care must be exercised in removing tubes. Take time and study out where it sticks, as you may ruin an expensive tube by a little carelessness.

### To Put on a Quick-Detachable Clincher Tire.

Put tube in casing. Put in the flating flap. Inflate tube sufficiently to take out all wrinkles. Turn wheel so as to bring valve stem hole at the top. Put valve stem in hole. Force tire over rim; it should go easily. If it does not, put on the inside bead with a tire iron, take a last look to see that the tube is not pinched or wrinkled, then force casing over the outside rim. Screw the valve stem collar on a few threads (just enough so that it cannot jump way out of the hole), and push the valve stem up as far as it will go. Put on the inside ring, being sure, however, to get the right side (the side with the channel) next to the tire. Lock one end in place and proceed around the ring inch by inch, forcing it into its proper place. If you have any trouble in locking the ring, let out a little air. Inflate the tire



and watch carefully to see that it fits into its bead channel all the way around. If it does not, strike sharply with the hand or lightly with a wooden or rawhide mallet until it does. Do not under any circumstances strike a tire with a hammer. Inflate to full pressure.

### To Put on or Take Off a Straight Wall or Dunlop Type.

The Dunlop type is taken off and put on precisely the same as the quick-detachable clincher, but the rings are reversed. It can easily be seen which side of the rings are meant for the different style of beads. The side for the quick-detachable clincher has a channel, the side for the Dunlop type is plain and curves outward.

### Floating Flaps.

Floating flaps are strips of canvas impregnated with rubber, and are placed inside of the casing where the tube would otherwise rest on the wheel rim.

They are a necessity on the Dunlop and quick-detachable clincher type, but are not used on the plain clincher type. The clincher tire comes so close together inside after it is on that such flaps would be useless. In the other two types, and especially the Dunlop, there is quite a space inside between the beads.

Many people do not consider these flaps necessary on the quick-detachable clincher style of casing. We do, however, as they keep the tube from touching the rim.

Be careful that these flaps do not wrinkle when put into the casing. If the flap is pinched, wrinkled or torn in any place, better discard it and buy a new one.

### NEW WRINKLE IN TUBE REPAIRING.

From a repairman in California comes this suggestion:

In repairing tubes we often have some with the puncture near the valve base or in the joint where the tube unites, and difficulty is experienced in making the patch cook down evenly all around. To overcome the trouble we use a small bag, such as a tobacco bag, with a little fine sand in it. By placing the bag on the tube over the patch and then the block on the bag, an even pressure on the tube is insured, the sand adjusting itself to the thickness all around.

This is really an excellent idea, but the Goodyear Tire & Rubber Company has a way that represents an improvement. That is to use a rubber block instead of the wood block and sand bag. The rubber block should be about three-quarters of an inch thick. It may be cut out of an old solid tire or built up of layers of tread stock. A shallow tin box of the right size can be made to serve as a mold. Cure on the flat plate

for about 40 minutes, at 60 pounds steam pressure. When the block gets hard from repeated vulcanization it should be discarded.

### WHEN REPAIRS LOOSEN.

"What is the matter," asks a repairman, "when the new work pulls away from the tread? It looks just as good at first as any part of the tire—smooth and even, but after a couple of weeks' running it comes loose from the old tire."

Answer—There might be almost as many causes of this trouble as there are operations in the process of making a repair. On this account it is difficult to diagnose the ailment at long range.

One likely explanation, however, is lack of "follow-up" pressure. If the equipment used is provided with clamps and wood blocks the original tightening of the clamps will not suffice throughout the period of vulcanizing. As the gum softens and begins to flow out, the pressure naturally decreases, and unless the clamps are tightened up, say, every fifteen minutes, the rubber will become spongy and the difficulty described might well be the result.

Of course, if an air bag is used, the necessary follow-up pressure is automatically supplied.

Insufficient buffing is another common cause of repairs loosening. Tread rubber is very tough and thorough buffing is essential to produce the fine pores on the surface of the stock that will allow the cement to work in and form a firm union. A power-driven wire brush is much more effective for this purpose than sandpaper or a rasp.

If too much stock is used, the excess will flow over the old tread where it is not buffed or cemented. The tread stock will begin to peel back along the edges, with the probability that in time the entire section will be loosened.

### A WORTHWHILE LETTER.

DETROIT, MICH.—L. C. Steers, Secretary Michigan Automobile Trade Association—Dear Sir:

I sent you my application for membership in the Detroit Automobile Trade Association, which I trust will be acted on favorably. I do not see how a man in the garage business can afford to be outside of your association. This is an age of co-operation. There is not anyone who possesses the full strength required to hold his place in any line of business without occasional help from the other fellow. This reminds me of a little incident which took place.

One day during a busy period there was a very large man, of strong physical make-up, moving along Broadway, carrying a walking stick. It would take a close observer to notice that the man was absolutely blind. This blind man was working his way to a corner on

Broadway where he wanted to cross, and while he could find his way all over New York, he did not want to cross Broadway without assistance.

Finally the blind man felt a hand laid on his shoulder. There was a man asking to be helped across the street. The blind man asked him why he needed help. "Don't you see I am a cripple?" the man answered. "Have you got good eyes?" asked the blind man. The answer came that his eyes were good but his legs were not.

"My friend," said the blind man, "I am totally blind and I want to cross this street also. If you will lean on my shoulder and use your eyes, we will cross together."

I feel that this illustration will shed a ray of light on some good man who is standing outside of the association. The blind man needed the eyes of the cripple and the cripple needed the strength of the blind man. By joining, these two men crossed together.

This is the way with the association. I feel that the association needs the garage man, also that the garage man needs the association.

There is lots of work to be done.

E. A. BOWMAN.

### THE SQUARE DEAL.

BATTLE CREEK, MICH., Aug. 10.—EDITOR: We believe that up to the present time garages have been looked upon by the general public without due business respect. The only way to alter this opinion is to give the customer at all times a square deal. He cannot expect, when you give him a square deal at all times and have once gained his confidence in your work and in the goods which you sell him, to have any excuse to complain about his bill.

Co-operation of all the dealers and garage owners has done and can do more than anything else in the way of putting garages in their proper place in business. The dealer who is in business today and gone tomorrow is the one who does the most harm towards turning automobile owners against garages, as they lose their confidence because of that fact.

Prompt and efficient service, courteous attention to all orders and, above all, a clean floor and a neat garage will bring good business and satisfied customers.

INDEPENDENT GARAGE.

### 533,921 FORD CARS MADE IN 1916.

The Ford Motor Co. during its 1916 fiscal year, which ended July 31, made 533,921 cars. The daily average production was 1,816 cars for 294 actual working days, or nearly 800 more cars per day than during the 1915 season.

# Devices for Increasing the Efficiency of Gasoline

The August issue of the *Horseless Age* contains descriptions and diagrams of new devices designed to reduce the amount of gasoline used. The ends sought to be attained are practically the same in every case, although the means of effecting the desired results differ considerably in their methods and application. The various principles employed to improve the explosive mixture or to loosen carbon by the introduction of additional air (either hot or cold) are the injection of steam or vapor, the use of gauze screens to break up the mixture into fine particles, the adoption of rapidly revolving fans to effect a similar purpose and the aid of moist air from the radiator. Some inject steam, super-heated or otherwise, into the mixture as it leaves the carburetor, thus raising its temperature and improving its combustible qualities.

The devices as listed are:

The Oxygenerator injects partially decomposed and therefore gaseous steam into the manifold or the carburetor, facilitating the use of low test fuel. This is listed at \$15 and sold at the Oxygenerator Co., 1925 Michigan Ave., Chicago.

The Compensating Vapor Plug is operated by engine suction which draws air into the manifold. The supply is automatically governed. Price, \$5. Automatic Carburetor Co., 2017 Michigan Ave., Chicago.

R. L. H. Economizer furnishes hot air to carburetor air intake by a valve with screened ports controlled from the dash. Valve adjusts to meet climatic conditions. Price, \$20. R. L. Hubbard, 4 Gouverneur St., Newark, N. J.

The Aerofram is an air valve designed to be screwed into the intake manifold and to be operated automatically by engine suction. Price, \$1. The Aerofram Co., 107 Massachusetts Ave., Boston, Mass.

Gasosava is a gasket with a fine wire screen and a wick. It is fitted in the intake, wick downward, and is designed to break up the mixture. Price, \$3. The Protex Co., 1790 Broadway, New York City.

Deitz Auxiliary Carburetor operates by means of a float valve controlled by water level in radiator and furnishes moist air to the carburetor air intake. Price, \$6. The American Device Company, Denver, Colo.

Russel Gasoline Saver is an air valve of ball type intended to be fitted to the intake manifold and operated by engine suction. Price, \$1.50 (50 cents extra for six cylinder engines). The Russel Electric Company, Danbury, Conn.

The Automatic Carburetor Regulator is designed to reproduce, automatically and constantly, the humidity or dampness in the atmosphere, using steam or moist air from the radiator. Price, \$5. The Automatic Carburetor Regulator Company, 913 Union Trust Bldg., Detroit, Mich.

The Duplex Vitalizer is an engine suction operated air valve, automatically controlled by the engine speed. Price, \$5. The Duplex Vitalizer Manufacturing Corporation, Realty Bldg., Elmira, N. Y.

Evergood Electric Primer uses heat generated by battery current passing through

coils to heat mixture in intake manifold. Gasket containing coils is inserted at the junction of carburetor and the manifold. Emil Grossman Manufacturing Company, Bush Terminal, Brooklyn.

The Weco Vaporizer consists of a copper water tank clamped to the exhaust pipe from which steam or vapor is injected into the intake manifold. Weco Manufacturing Company, 144 Pearl St., Boston, Mass.

Sterling Gas Saver, a plug incorporating a valve and spring, designed to permit the escape of force of backfire through air ports. Price, \$5.50. The Motor Car Spring Company, 243 W. 17th St., New York City.

Hart-Bell Carbon Remover, designed to introduce live steam to cylinders and is furnished with a three-way valve to admit water or air or to shut-off. Price, \$5. The Utility Products Company, Times Bldg., New York City.

The Jenkins-Vector Company has two aluminum bladed fans, which are revolved in opposite directions by the passing mixture. Price, \$10. The Jenkins-Vector Company, Richmond, Va.

Aer-In is an intake air plug with an internal ported sleeve governing the admission of air to the intake. It is suction operated. Ware Brothers, N. Ada St., Chicago.

The S-P Vaporizer consists of a dome-shaped double wire gauze screen retained in a lead gasket and intended to be fitted between the carburetor and the inlet. Price, \$5. The S-P Vaporizer Company, New York City.

Parker-Noonan Auxiliary Air Valve takes hot air from the exhaust manifold and damp air from the radiator, mixes them with a fan and passes them into the intake. Parker-Noonan & Co., 506 Mercantile Library Bldg., Cincinnati, O.

The Oxygen Valve is installed in the intake manifold, breaking up the mixture and furnishing additional oxygen. Price, \$3. The Oxygen Valve Company, Utica, N. Y.

The Mosco Economizer is designed to furnish heated air to the intake and to also act as a primer. The priming fluid is fed through a dash valve. Price, \$3. The Motor Specialties Company, Waltham, Mass.

The Right Gasoline Saver is an intake air valve actuated by the differences of vacuum existing in the intake. Price, \$5. The Right Motor Specialties Company, 1322 Michigan Ave., Chicago.

The Parker Vaporizer is of wire gauze gasket type with an internal diffuser designed to thoroughly mix the gasoline and air. Price, \$3. The Parker Manufacturing Company, Philadelphia, Pa.

Automatic Gasoline Economizer, an engine suction operated air valve installed in the intake manifold. Price, \$3. The Auto Economy Company, Chicago.

The Evapco Gas Saver is a valve of the engine suction operated type. It is held closed when starting and opens as speed increases. Price, \$5. The Evapco Manufacturing Company, 428 Grand River Ave., Detroit, Mich.

The Auto Valve Gasoline Saver is designed to furnish additional air to intake. The device also acts as a primer. The Cray Company, 650 Woodward Ave., Detroit, Mich.

Perrin "More Power" Valve, a suction operated air valve to be installed in the inlet manifold. Price, \$2.50. The Perrin Manufacturing Company, Detroit, Mich.

Gasco Gasoline Economizer, a three-screen gasket type. The screens are designed to break up the mixture and prevent backfire flames from passing. Price, \$1 to \$1.50. The Gasket Supply Company, 1729 Ludlow St., Philadelphia, Pa.

Brugan Economy Valve, an automatic air valve installed in intake and operated by engine suction. Adjusted by varying spring compression. Price, \$4. The Brugan Economy Valve Company, 27 State St., Bangor, Me.

The Humidifier is an engine suction operated device designed to furnish warm, moist air to the carburetor. It is valve controlled. Price, \$5 up. The Improved Humidifier Company, 108 Pope Blk., Pueblo, Colo.

The V Hot Air Valve injects heated air into the intake. Operates by a lever located on the steering post. Price, \$7.50. The V Air Valve & Manufacturing Company, 1648 Tremont St., Denver, Colo.

The International Sub-Carburetor furnishes a regulated spray of warm air to the intake. It is fitted with a priming attachment. Price, \$15. I. B. Beltman & Co., 4409 Michigan Ave., Chicago.

The Michener Gasoline Saver & Primer admits air to the intake through a cone-shaped gauze mesh. Control is from steering post. The mixer bowl is also used for priming. Price, \$5. E. S. Michener, New Castle, Pa.

The U. S. E. Economizer distributes pre-heated air around the walls of the intake and remixes the gases. Price, \$7.50 up. The Universal Shock Eliminator, Inc., 6-8 W. 62d St., New York City.

The "Liti Flend" is an intake air valve operated automatically by engine suction. It may be also used as a primer. Price, \$2. The White Manufacturing Company, Bodman Bldg., Cincinnati, O.

Taylor's Motor Thriller is an engine suction operated air valve designed to furnish even mixture irrespective of vacuum conditions. Price, \$5. The Taylor Manufacturing Company, Jefferson Ave., Detroit, Mich.

The "Go" Motor Speeder imparts a swirling movement to exhaust heated air introduced to the intake manifold and thus completely vaporizes the fuel. Price, \$10. The "Go" Motor Speeder Company, Three Rivers, Mich.

The Deppe Gas Generator is composed of a mixer, a throttle chamber and a vaporizer. Designed to render possible the use of lower grade fuels. W. P. Deppe, 127 Duane St., New York City.

The Ieco Manifold Plug is an electric vaporizer and primer, generating heat from current furnished by the storage battery. Price, \$5. The Interstate Electric Company, New Orleans, La.

The Peerless Gasoline Saver takes hot air from the exhaust and injects it into the intake. It is operated by engine suction. Price, \$10. The Peerless Motor Specialties Company, 136 W. 52d St., New York City.

The Vapo-Humidifier injects air and vapor into the manifold in correct proportions. Manual control is used. Price, \$5. The Auto Gas Saver Company, 540 National Life Bldg., Chicago, Ill.

The Clemmer Vaporizer consists of a system of baffle plates located in the intake manifold. Designed for Ford engines. Price, \$5. W. A. Clemmer, 106 N. Gay St., Mt. Vernon, O.

The Jumbo Economizer furnishes air to intake manifold and is controlled from the steering post. Price, \$2.50. E. Edelman & Co., 341 E. Ohio St., Chicago.

The Sevison Gas Accelerator consists of

an air valve and a gasoline valve with spraying jet, controlled from steering post. Price, \$8.25. Sevison Bros., Elkhart, Ind.

The York Gas Saving Device is an auxiliary air valve intended to be installed in the intake and operated by engine suction.

Price, \$3. The York Gas Saver Company, Jefferson St., E., Detroit, Mich.

The Triple D Mixer is furnished with curved fan blades. It is installed in the intake. Price, \$5. The Virginia-Carolina Hardware Company, Richmond, Va.

# Features of the Mid-season Models Recently Announced

Some of the features of the recently announced mid-season models are here given. Complete descriptions and specifications may be obtained from the manufacturer on request. The outlines which follow relate to the style and class of vehicles now offered. In some cases a forecast of the model was made in January. Details regarding the construction and equipment of such cars are now available. The record follows:

## H-A-L TWELVE.

The H. A. Lozier Company, Cleveland, O., is now producing the H-A-L twelve, announced last winter. It sells for \$2,100, either as a seven-passenger touring car or as a roadster.

## JEFFERY SIX.

A six cylinder model for 1917 was brought out by the Thomas B. Jeffery Company, Kenosha, Wis. The outstanding feature of the new car, which will retail at \$1,365, or \$85 lower than the previous six, is its low body and general comfort in seating arrangement. A more perfectly balanced crank-shaft is another improvement, which results in a smoother acting engine.

## FRANKLIN SERIES NINE.

The Franklin Series 9 has all the fundamental features of previous Franklin cars, and has them developed to a higher degree. The two most important principles that have always been involved in Franklin construction are scientific light weight and resiliency. The basis of each is laid on air-cooling, wood sills, full-elliptic springs, drive through the springs and tires of the proper size. The weight of the Series 9 touring car is 2,280 pounds without gasoline, a reduction of 400 pounds over Series 8.

## NATIONAL HIGHWAY TWELVE.

A new series of National Highway twelve-cylinder cars is now being produced in the Indianapolis factory and incorporates several changes over the previous model. This is a companion car to the National Highway six which is being continued. Prices are higher this year on the twelve-cylinder model than last, the increase being \$130 per car, making the price now \$2,150. This includes extra seats, however, while last year they were sold at \$30 extra.

## SIXTEEN-VALVE FOUR-CYLINDER.

A sixteen-valve four-cylinder car is a new product for Detroit. This will be made by the Aland Motor Car Company, a new concern, just organized and expects to be in such a position as to start manufacture about the first of December. Production will first be started on a five passenger touring and a two passenger roadster. The line will be made up of one chassis model with several body styles. It has not definitely been decided upon, although in all probabilities the car will retail for about \$1,500.

## FOUR-CYLINDER BRISCOE.

The Briscoe Motor Car Company, Jackson, Mich., has a new car fitted with a four-cylinder motor and price at \$625, either with a five-passenger touring body or a four-passenger roadster type.

## 1917 MADISON CAR.

The 1917 model of the Madison cars, which are manufactured by the Madison Motors Company, Anderson, Ind., will have two body forms, one a five and the other a seven-passenger, fitted to a chassis, known as the 6-40 model, identical for both bodies except as to wheel base. The principal changes are the alterations in the appearance of the bodies, the lines having been made to correspond to the flat cowl design which is so much in vogue in the new models this season.

## TWO MARION-HANDLEY SIXES.

The Mutual Motors Company, Jackson, Mich., which concern is getting out the Marion-Handley cars, have two sixes for 1917. They are in two sizes, the 6-40 and the 6-60; the two cars possess great similarity of design. Prices are \$1,185 for the 6-40 and \$1,385 for the 6-60, in either roadster or touring bodies.

## BUICK FOUR FOR \$665.

The Buick Motor Company will again manufacture the four-cylinder cars in addition to continuing without change the production of the little six-cylinder model. The new four follows characteristic Buick design throughout, with perhaps more alteration in the motor than elsewhere. It will sell at \$665 as a touring car and as a roadster it will be priced at \$650. In its general lines, especially the radiator, the new car is typically Buick. It has a wheel base of 106 ins. and there is plenty of room for five passengers.

## THE JORDAN.

The new Jordan, manufactured by the Jordan Motor Car Company, Cleveland, O., is described as being "a car of finished mechanical excellence, carefully designed and assembled to be fitted with a series of custom style bodies in the 1917 vogue." It is a comparatively light, perfectly balanced machine, with rapid acceleration and capable of running from two to sixty miles per hour on high. The Jordan, with seven passenger body, is priced at \$1,650, with wire wheels \$100 extra, the four-passenger sporting type with wire wheels as regular equipment \$1,750, and the roadster \$1,650, wire wheels \$100 extra.

## OVERLAND OFFERS THREE NEW MODELS.

The Willys-Overland Company of Toledo, O., is offering three new cars. Model 75-B may be looked upon as the successor to the 1916 model 75, although it exhibits several improvements and refinements of interest. The bore of the engine has been increased to 3½ inches, with correspondingly added power, the new engine developing, it is said, thirty-one and a half horsepower at 1,950 r. p. m. and furnishing road speed limits of from two and a half to fifty-three miles per hour. This is listed at \$635, and \$620 with roadster body. In the 85 series both the four and the six are of similar design except as regards the engine and the wheelbase. The block cast engine of the 85-4 has cylinders of 4¼x4¼ inches bore and stroke and thermo-siphon cooling is used. The 85-6 engine is also cast en bloc, with bore and stroke of 3¼x4¼ inches and cooling water circulated by a pump. Model 85-4 is listed at \$795 and 85-6 at \$925.

## THE 1917 VELIE.

The Velie Motor Vehicle Company, Moline, Ill., has two models out for 1917. Model 28, which takes the place of model 22 and sells with five-passenger touring body for \$1,085, and a more powerful car known as model 27, listed at \$1,550 with seven-passenger body. No less than seven types of body are offered on the model 28 chassis, while in the larger car a touring body only is furnished. The smaller model is fitted with a six-cylinder block cast engine having a bore and stroke of 3¼x4¼ inches and that of model 27 has cylinder dimensions of 3¼x5¼ inches. Both engines are of continental make.

## SIX-FORTY ANDERSON.

The 6-40 Anderson, which is made by the Anderson Motor Car Company, Rock Hill, S. C., is to be continued without mechanical change for 1917. A combination roadster is the only addition to the line, and this is probably the most novel construction of any car that has been offered this season. It is a five-passenger roadster in which the rear seat can be folded up and covered by a very simple operation, converting the car into a two-passenger roadster.

## REO SIX REDUCES PRICE.

The Reo Motor Car Company will continue the passenger cars as they were made in the past season, with some minor improvements. The price of the Reo four remains at \$875. A new body style, an enclosed body, has been added. It will be listed at \$1,025. A reduction of \$100 has been made in the price of the Reo six, which has been selling for \$1,250. A new body style, a sedan, has been added and will sell at \$1,750.

## HOLLIER SIX.

The Lewis Spring & Axle Company, Chelsea, Mich., which is making the Hollier eight, has added a six to its 1917 line, which is listed at \$1,085, with either a five-passenger touring body or a four-passenger roadster.

# Developments in the Accessory and Manufacturing Fields

## AN ECONOMY TEST.

The recent 300-mile non-stop run arranged for the dealers by the Saxon Motor Car Company developed remarkable results for the Saxon Six equipment.

A total of 62,000 miles was covered during the run, this record being made by 206 Saxon Six stock cars, and in all parts of America, the individual runs having been conducted by Saxon dealers.

In view of the diversified conditions of travel, the average mileage of 23.5 miles to the gallon is considered an indication of high efficiency of the Saxon Six, and a tribute to the Rayfield carburetor, a part of its standard equipment. Naturally the records turned in from mountainous and hilly districts and in sections where muddy roads were encountered tended to hold the average down. The Frye Motor Company of St. Louis, the winner, averaged 34.2 miles per gallon of gasoline. The Northwestern Automobile Company of Minneapolis averaged 33.96 miles; C. J. Allen of Geneva, N. Y., averaged 32.15.

This run was remarkable also in the fact that no mechanical trouble was experienced by any of the 206 cars participating, and no adjustments of any kind were made.

## A CARBURETOR MUSEUM AT WASHINGTON.

Washington, D. C., is not only the home of the National Museum, but it also boasts of the only known Carburetor Museum, found at the garage of Irving Donahue at Washington.

Mr. Donahue has been a specialist in carburetor trouble, and in the course of several years has collected an almost unbelievable number and variety of defunct carburetors, of both foreign and domestic makes. It is an interesting display covering the entire gamut of carburetor construction from the days of the "one-lunger" up to the latest models, and is a collection that will some day have a high historic value, if not an intrinsic one.

## TO DOUBLE CAPACITY FOR 1917.

The Findeisen & Kropf Mfg. Company's plant at Twenty-first and Rockwell streets, Chicago, where Rayfields are made, is being enlarged. New equipment, material contracts, enlargement of the factory are among the everyday details that are being perfected in time to double the output of the present year in preparation for 1917. Although the 1916 production was greatly increased over that of the previous year, it still failed to meet

the demand. It is the purpose of the manufacturers to bring production to a more satisfactory point, not only that more car-builders may be supplied with Rayfield equipment, but because of the heavy demand for the replacement of carburetors on owners' cars, which amounts to 35 percent of the total output.

## AN ACCESSORY CONSOLIDATION.

An announcement of exceptional interest to the motor trade is of the purchase of the Wilmo Company, of Chicago, and the Amplex Auto & Machine Works, of Mishawaka, Ind., by the Gillette Motors Company. All the property of the Wilmo and Amplex companies has been taken over by the new Gillette corporation, which will henceforth be located in the plant formerly occupied by the Amplex at Mishawaka. Howard, Simmons & Co. of Chicago were the bankers in the transaction.

The new company will market a line of motors, manifolds and accessories known as the Wilmo Products and the word "Wilmo" will be used as a trade name. King C. Gillette, president of the Gillette Safety Razor Company, also is president of the new corporation, with C. E. Erikson, formerly of the Aurora Automatic Machinery Company, serving as general manager.

M. L. Williams is consulting engineer for the company and J. R. Austin, formerly with the Grant, Maxwell and Wilmo companies, is chief engineer. L. F. Maurer, factory manager, J. P. Moore, shop superintendent, Nelson Culp, auditor, and their corps of assistants formerly with the Amplex company, are all retained by the new corporation.

## SPRING LEAF SPREADER.

A spring leaf spreader has been introduced by the H. H. Struve Manufacturing Company, 3608 Idlewild avenue, Cincinnati, O. This tool is quick and powerful in action, one movement of the lever opening the spring and permitting the lubricant to be applied. It is strongly made and may be used on any spring. The price is \$2.

## THE WOODWORTH SPRING COVER AND LUBRICATOR.

The Woodworth spring cover and lubricator is intended not only to lubricate the springs but also to prevent moisture and dirt from getting into them. It is claimed by the manufacturer that this device gives better results than any other spring lubricator on account of it

preventing dirt and moisture from counteracting the effect of the lubricant.

This is a covering completely enveloping all openings between the leaves of the springs. It is laced over the spring with the lacing underneath and has an inside lining of felt wicking which is saturated with oil before the cover is put on.

The covers are laced on through hooks much like shoe hooks, so that they can be put on very quickly, and if laced smooth they make a very neat appearance.

They are made in different sizes for different makes of cars and the cost is comparatively low. They are produced by the Leather Tire Goods Company, Niagara Falls, N. Y.

## BUMP ABSORBER.

A double loop spring on either side and a double leaf spring in the center are designed to "soak up" or nullify almost the entire force of the blow resulting from violent contact with a tree or other substantial obstruction. After the impact has been sustained the bump absorber springs back to its original shape. This absorber is made by Edward V. Hartford, Inc., Morgan street, Jersey City, N. J.

## SLIDING GARAGE DOOR HANGER.

This door operates on a continuous track. One section may be used as an ordinary hinged door, making it unnecessary to open the entire door, except when the car is needed for use. In order to permit of this feature, the hangers are attached to two sections only. This has been introduced by the Loudon Machinery Company, Fairfield, Iowa. The cost of the hanger, including track, hinges, handles, stay, rollers and suspension hangers, nails, screws—everything, in fact, but the lumber—is from \$3 to \$4.50 each.

## A HUBPUL DEVICE.

With the new Pillsbury hub cap device, designed for Ford and Chevrolet cars, the car may be pulled out of mud, sand or snow with its own power. It may also be used as a wheel puller. The Hubpul may be attached to either rear wheel in place of the original cap. The rubber covered hooks forming part of the equipment are attached to a rope or cable which is wrapped around the hub, the hook first being fastened to one of the spokes. The other end of the cable is attached to secure anchorage and the engine started. The cable winds around

the hub and a leverage is secured greater than that of ordinary traction. The device is manufactured by the Pillsbury Manufacturing Company, 322 Hennepin avenue, Minneapolis, Minn., and is listed at \$6.

#### **SUPER-GLASS.**

The Super-Glass Company, Tacony, Philadelphia, Pa., specializes in the production of Super-Glass, which consists essentially of two pieces of glass, between which is a sheet of celluloid. Glass and celluloid are welded together under high temperature and extreme pressure, and it is stated that the process results in the production of a perfectly solid sheet possessing all the transparency of best plate glass combined with the strength of a sheet of metal and the resilience of a billiard ball. It is further stated that a stone thrown against a sheet of Super-Glass will rebound like a golf ball. A powerful blow may crack the glass into hair lines, but there is no shower of flying glass or splinters, and the efficiency of the windshield remains unimpaired so far as protection from wind and weather is concerned.

#### **SIMPLEX ENGINE DRIVEN TIRE PUMP.**

The Chicago Tire Pump Company introduces an engine-driven tire pump. The plunger is provided with a large grease chamber and the use of a radial ball bearing eliminates the conventional splash system of lubrication. The valves are of ball design and designed to give full efficiency both on intake and expulsion. It is stated that the features which combine to produce this pump render it impossible for oil or oil vapor to gain access to the compression chamber. This is listed at \$12.50, including sliding gear, hose and pressure gauge.

#### **HAND-I-WASH.**

The Tay-Miller Manufacturing Company, 1714 Cherry street, Philadelphia, Pa., has a new outfit out, which contains water, soap and towel, combined in such a manner as to take up but little space. This equipment consists of a strong case containing a roll of absorbent paper towels and a tube of especially prepared washing liquid which may be used without the addition of water. This liquid is described as being made from vegetable oil, producing an abundant lather. The location of minute punctures can also be made by applying this liquid to the surface of the inflated tire tube. The price of this outfit is \$1.

#### **NO-SKID'M.**

A recent invention which is known as the No-Skid'm and which is being marketed by the G. G. No-Skid Tire Belt Company, Seattle, Wash., consists of a substantial concave belting wrapped about the tire shoe and guided by an idler

pulley fastened to the bottom of the running board. Tests have shown that tire mileage is doubled with the use of the device, and that absolute traction is assured in sand or on slippery pavements. Prices range from \$22.50 to \$37.50 per set, depending on the size of the tires.

#### **ROADWAY FILLING PUMP.**

The Western Oil Pump & Tank Company, St. Louis, Mo., is manufacturing a new gasoline filling station, which is a cabinet-encased pump built of 5/16-inch cast iron. A small door at the bottom of the pedestal gives access to the drain cock of the filler chamber and to the pipe union. The pump is adjusted to measure gallons, half-gallons, quarts or pints at a stroke. Two and one-half turns of the handle are required to discharge a gallon, giving an actual pumping capacity of 13 gallons per minute. The gallon meter keeps an accurate check on all gasoline drawn up to 9,999 gallons, and a discharge register is fitted which automatically tallies every gallon pumped from 0 to 10 gallons and is reversible from any point. It is in plain view of both customer and operator. The doors on this pump overlap, making it weatherproof, and they are fitted with Corbin six-tumbler locks.

#### **PNEUMATIC GREASE GUN.**

This Pneumatic Grease Gun is two inches in diameter and 18 inches long, and operated by compressed air at pressures of 50 pounds or more. It is designed to handle lubricants of all consistencies from the hardest cup grease to the hardest cylinder oil, and may be used for filling or emptying gear boxes, differentials, etc. It is double acting and self-filling. There are two nozzles, one for fluids and the other for heavy greases. It is made by the Lewis Pneumatic Grease Gun Company, Chicago, Ill., and sells for \$10.

#### **AUTO MIST BODY CLEANER.**

The Swanson Supply Company, 2124 West Lake avenue, Seattle, has a cleaner and polisher for automobile bodies, upholstery, tops and windshields. It is applied with a sprayer, and is then wiped off with cheesecloth. It is not necessary to dust the body before using the liquid.

#### **FORD BREATHING PIPE.**

The Auto Parts Company, Providence, R. I., is introducing a new breather pipe for the Ford car that, being equipped with a cover, prevents oil spraying over the motor and the inside of the hood. Having an easily removed cover, it is a simple matter to renew the supply of lubricant and a fine screen prevents foreign elements reaching the oil reservoir. The breather is fitted with an integral hook that fastens around the bolt holding the timer and removing the cover

does not affect this hook. The breather is nicely finished, is easily attached and retails at 50 cents.

#### **HAMPTON TIRE INNERLINERS.**

The Hampton-Campbell Innerliner Company, 1038 W. 26th street, Indianapolis, Ind., specializes in a resilient innerliner made of chrome leather and extra strong fabric designed to strengthen the finished tire in cases where the plan of stitching one worn casing over another is adopted. By using the innerliner it prevents chafing of inner tubes and renders the entire structure practically puncture proof. All sizes are made. This company also furnished the Hampton blow-out patch made from a combination of a ply of leather between two of fabric. The patch is self-cementing.

#### **MARATHON RUNNER TIRE.**

The Marathon Tire & Rubber Company, Cuyahoga Falls, Ohio, introduced a ribbed tire, which sells at the same price as the regular smooth tread. The tread of the new tire, which is known as the Marathon Runner, consists of three ridges of rubber with hollows between, all extending around the tire. The tread is designed to combine efficient traction with immunity from side slip and it is pointed out that the ridges afford additional protection against puncture. The new tire is furnished with fabric body and white tread and also with whipcord body and black tread.

#### **TIRE REMOVER AND REPLACER.**

Mason's Automobile Clincher Tire Remover & Replacer Co., 122-124 Broadway, Paducah, Ky., is marketing a tire remover and replacer. It is claimed this tool will remove any tire of clincher type in less than three minutes by simply attaching it to the wheel and giving the latter one complete revolution. Replacement is effected in a similar manner.

#### **SELF-LUBRICATING SPRINGS.**

The Stanley self-lubricating springs are manufactured by the Penn Spring Works, Baldwinsville, N. Y. These springs are made with oil retaining felt pads under the ends of each leaf, to which lubricant is supplied through ducts formed in the spring by means of an ordinary oil can. The oil is drawn by capillary attraction from the pads to the center bolt and thus the friction surface of each leaf is kept properly lubricated. These springs are furnished in various sizes and types. The Fulton Sales Company, 910 Michigan avenue, Chicago, Ill., are selling agents.

#### **THE NEW SEBRING TIRE.**

The Sebring Tire & Rubber Co., Sebring, Ohio, after having conducted exhaustive tests on the road with a tire constructed of pure gum rubber, is now ready to market the new product direct



from the factory. The fabric is seven-ply, impregnated with pure gum. Between the fabric and casing is a pure-gum, friction skim coat and on top of this is the road-contact tread, which is shaped in a non-skid tread of original pattern. The non-skid type only will be manufactured. Straight side tires are offered, but applicable to any type of rim. The Ford size is the only exception and that is, of course, a regular clincher. Cables of piano wire, nineteen strands in each cable, and the number of cables varying with the size of the tire, serve to retain the tire on the rim under any strain. This construction, together with the use of gum rubber, is said to practically eliminate rim cutting.

#### **GASOLINE AND OIL HANDLING SYSTEM.**

Instantaneous flow of the liquids at any point of use by means of air pressure, without pumps or other devices, characterizes the gasoline and oil storage and distributing system developed by the Allen Pressure Company, 1926 Broadway, New York. With the pump system the elevation that the liquid may be raised is about thirty-two feet, but the Allen Pressure System permits the flow at any elevation, requires no labor and eliminates all working parts. The system consists of the usual underground storage tank, with the addition of as many secondary or "working tanks" as there are draw-offs in the system. Each working tank is connected with the storage tank by a supply line through an automatic check valve.

#### **HEADLIGHT REGULATOR FOR FORD CARS.**

The General Electric Company, Fort Wayne, Ind., has a small transformer designed to steady the headlight illumination of Ford cars. The current passes from the magneto through the transformer to the lamps, which are wired in multiple. Wiring in this way prevents the possibility of both lamps going out at the same time. The transformer is claimed to furnish a steady light at all speeds above 10 m. p. h. In installing it is only necessary to substitute 6-volt lamps in place of 9-volt lamps, attach the present headlight wire to one of the magneto terminals of the transformer and ground the other transformer terminal to the frame. This light may be placed on the dash under the hood or floor boards, or wherever it is most convenient. Price \$3.64, to dealers \$2.75.

#### **TIRE RACK BRACKETS.**

Elgin Motor Power Manufacturing Company, Cedar Rapids, Iowa, has brackets which enable the dealer to build his own tire racks. Upright standards of 1½-inch pipe are erected at about 6-foot

intervals and the brackets are clamped onto the pipes. Planks are then screwed onto the brackets, making the racks continuous. In a 480-tire installation 110 feet of 1½-inch pipe and thirty-three brackets were used. The complete fixture cost less than \$35. One dozen brackets are sufficient for a 150-casing rack.

#### **FORD TRUCKS.**

The Ford Motor Company confirms the report that it will bring out a one-ton worm drive truck. They expect to make 200,000 trucks the first year, and, on account of this large production, it is expected that the price of the truck will be \$500 or even less. It is to be way below the price of any other one-ton truck ever made.

There will also be a change of appearance in the pleasure cars, as the new Fords will be fitted with sloping hoods and crowned fenders, which will give a new outline. The radiator shape also will be remodeled to accord with the moulded form that has now been adopted.

#### **STROMBERG REFINANCING COMPLETED.**

Plans for the financial expansion of the Stromberg company have been completed in New York. As recently reported, the Stormberg Motor Devices Company, Chicago, with a capital of \$15,000, has been taken over by the Stromberg Carburetor Company of America, recently incorporated in New York at \$5,000,000. The directors of the new company are: Charles A. Brown, Charles W. Stiger and William L. O'Neill of Chicago, H. E. Gunnison, C. L. Saylor and Allen A. Ryan of New York, and Harry E. Stutz of Indianapolis. Mr. Stiger, president of the old company, becomes president of the new one. The officers remain as before, except that Ryan replaces Carleson as treasurer. There will be no change in the policies of the company. The factory capacity is being doubled.

#### **STEWART-WARNER PURCHASES V-RAY COMPANY.**

The Stewart-Warner Speedometer corporation of Chicago, maker of speedometers, vacuum feed system, motor-driven tire pumps and other automobile accessories, has purchased the business of the V-Ray Company, Marshalltown, Iowa, and hereafter will manufacture and market the V-Ray spark plug.

#### **OVERLAND GAS TEST.**

W. T. Foley, assistant secretary of the Cincinnati Automobile Club, recently conducted a gasoline test of a Model 86 Overland. A car was taken from the stock of the Citizens' Motor Car Company, the main tank was disconnected from the carburetor and a small tank, which held one gallon of gasoline, was connected. The carburetor was then set

so that the engine ran freely both on low and high speed. The speedometer reading then was taken and the car was run over a prescribed course, until it stopped for lack of fuel. The speedometer reading was then taken again, and it was found that the car had traveled 17.83 miles on one gallon of gasoline. This gasoline was not high-proof, but an ordinary grade, of which the hydrometer test showed a reading of 59 degrees. This feat was considered unusual as the car had just been taken out of stock and had never been run before. The switch was not thrown nor the clutch disengaged during the trip.

#### **EXPORTS INCREASE 35 PERCENT.**

The exports of motor cars during the fiscal year ending June 30, 1916, reached the enormous total of 77,496 machines, valued at \$97,464,381, together with parts, not including engines and tires, to the value of \$22,536,485, according to figures compiled by the Department of Commerce at Washington. The exports were classified during the fiscal year as follows: Commercial cars, 21,265, valued at \$56,805,548; passenger cars, 56,231, valued at \$40,658,833.

During the fiscal year of 1914-15 there were 37,876 machines exported, the value being \$60,254,635, the exports consisting of 13,996 commercial cars, valued at \$39,140,682, and 23,880 passenger cars, valued at \$21,113,953.

While the year's totals mounted high the figures show a decided falling off during June last as compared with the same month of last year. During June last 1,416 commercial cars, valued at \$3,551,148, and 4,905 passenger cars, valued at \$3,416,396, were shipped abroad, together with parts not including engines and tires, to the value of \$1,886,746. In June a year ago the exports consisted of 2,990 commercial cars, valued at \$8,578,802, and 4,418 passenger cars, valued at \$4,785,998.

#### **RICKENBACHER WINS AT TACOMA.**

Eddie Rickenbacher in a Maxwell outraced the fastest field of entries gathered in the Northwest and took first place in the 300-mile speed contest at Tacoma, Wash. He won easily at an average speed of 89.3 miles per hour, his time being 3:21:40.1. Milton in a Duesenberg was second at an average of 88.6, and Lewis in a Crawford third, his average being an even 88 miles per hour. De Palma in his Mercedes set the pace from the start, leading the 14 entrants and holding the lead consistently until 175 miles when engine trouble set in and so checked his speed for the rest of the race that he was unable to secure better than fourth place. His average was 87 miles per hour.

# Association News

## MICHIGAN CONVENTION.

The annual convention of the Michigan Automobile Trade Association will be held at Flint, Mich., Thursday, October 12, under the auspices of the Genesee County Automobile Trade Association, which has recently been organized.

One of the first things this young association did, after completing its organization on July 14, was to extend an invitation to the state association to hold its next convention in their city. They have a special committee working out the details for this convention and expect to have a report ready in a short time.

This will be the fourth convention, but it will be the most important that has ever been held, as there are several matters to be taken up at this convention in connection with the change in the name and constitution and by-laws of the association, so as to admit the different car dealers' associations throughout the state, the name having been changed so as to admit all of the retail interests of the automobile industry as active and affiliate members of the state and national association without favoring any one branch of the industry more than another in its application and yet broad enough to cover the entire retail field.

There will be work taken up and plans laid to remedy the gasoline situation in Michigan, and also to revise and strengthen the present lien law so as to fully protect the honest garage man, the honest car dealer and the honest car owner. There will be several other important matters to come up, and it would be well for every dealer and garage man in the state of Michigan to fix in his mind the importance of this convention on October 12, and plan to be there, as it will mean more dollars and cents to him than any other investment it will be possible for him to make.

Talk it over with your neighbor, weigh the different grievances of trade that you have to contend with, and come to this convention with suggestions to remedy them.

## WHY THE MICHIGAN ASSOCIATION WAS FOUNDED.

To inspire confidence in the garages by promoting a friendly relationship between the garage owners and their patrons.

To assure to garages the recognition and relationship to automobiles and motoring to which they are entitled.

To establish uniform standards of service to the tourist.

To assist in procuring proper legislation, and to oppose harmful legislation.

To secure proper recognition and credit

rating by commercial agencies and to improve banking facilities.

To advocate a uniform cost system tending to eliminate price-cutting and over-charge.

To encourage the maintenance of a record of local employees for the use of members.

To establish a more friendly relationship between its members.

To promote their general welfare by elevating the standard of service of garage employees.

To assist in equalizing and lowering insurance rates for its members.

To eliminate the giving of trade discounts to the consumer and to stimulate the sales of the automobile supplies by the garage.

To secure the passage of an equitable lien law that will entirely protect the honest garage owner, the honest car dealer, and the honest car owner, and to render it impossible for the others to exist.

To co-operate with the A. A. A. and similar organizations to assist in the elimination of the undesirable garage owner and automobile dealer.

To work in harmony with the Good Roads Association.—*Michigan Bulletin.*

## CHICAGO'S JULY MEETING.

A report submitted by the treasurer of the Chicago Garage Owners' Association at the July meeting showed a healthy condition:

Balance on hand at last report .....	\$ 971.38
Total receipts .....	256.50
Total .....	\$1,227.88
Expenses for the month. ....	146.25
Balance .....	\$1,081.63

## A Situation Adjusted.

A report was made by J. C. Thorpe, general director of the National Automobile Trade Association, on the complaint against the practices of an agent for the Fisk Tire Company, in which it was brought out that the complained of practices were a violation of the company's policy, not an observance of it, and that such practices would be discontinued.

President Halbert complimented the National on the results secured and urged members to watch for and report departures from recognized business practices.

Commenting on this Mr. Thorpe stated that the company was as anxious to conduct its affairs in the right way as any one present, and that, he was satisfied,

was the attitude of all the larger tire companies.

## Electric Vehicle Affairs.

Reporting for the electric vehicle division Harry Salvat indicated progress in straightening out the situation. The measured service basis is being investigated and considered. The manufacturers, he said, were getting ready for business for next year and are making plans to put out more electric cars than ever before.

## Membership Campaign.

A lengthy discussion followed a consideration of the membership campaign to be inaugurated. It was pointed out that there are about 400 garages in Chicago and of that number possibly 300 were of the class entitled to membership in the organization.

President Halbert—From the report of our assistant secretary, who has canvassed the situation, the question of \$10 initiation fee does not seem too high, but when you say \$2 a month ever afterwards it stops some of them. They think the dues are excessive and it's pretty hard to reason with them on that.

We got down to figures and found that by increasing the membership to 300 we could gain a strength that would enable us to do a lot of things in Chicago. Membership in the association is what counts. With 300 members in Chicago we could cut our dues in half. Instead of \$24 we could make the dues \$12. Our idea in this campaign is to put three or four men in the field and canvass every garage in the city of Chicago. If we do not get the big number we hope to get we will give the applicant the privilege of withdrawing his application fee.

We have men here who paid \$25 initiation fee and \$40 a year dues, and were well satisfied to do it. Many of our members feel that \$2 is little enough.

## Non-Resident Membership.

Our association has a charter from the state organization covering the county of Cook. There are a number of little towns outside of Chicago and the garage owners probably would be glad to come into Chicago once a month. We feel they would be glad to be members but not pay the same dues as are paid by Chicago members. Our idea is that non-resident members should pay \$10 a year dues. We should be able to get in a number of them in that way.

Give our committee the name of your neighboring garage man, if you do not care to ask him, and we will try to get him in the association. We are going to be badly disappointed if we do not reach the 300 membership mark.

## Making Successful Garagemen.

Mr. Salvat suggested that a list of the accomplishments of the Chicago Garage Owners' Association be printed and also a list of the things in store for members. "One thing is certain," he said, "the members who attend our meetings are successful garagemen."

Robert Bland pointed out and emphasized the need for education of the garagemen of Chicago and stated that the Chicago Garage Owners' Association was

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30x3½..... 5.50	33x4..... 7.50	36x4..... 9.00

Other sizes in proportion. Write for prices today.

Send \$1 deposit for each tire ordered, and we will send the tire balance C. O. D., subject to your examination and approval before paying for same.

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the greatest educational force in the country.

J. C. Thorpe said the great thing to be accomplished was to educate the car owner. He said:

Look over the history of the Chicago Garage Owners' Association and over that of other trade organizations and try to pick out a few specific instances of where they are trying to educate the car owner. I am confident that if in our organization work we will spend more time improving our business, improving our service and by concentrating we will prove to the car owner that we are legitimate merchants and we will go further than if we spend our time cussing the other fellow who sells his stuff at a price that is not a profitable price.

In the National association office we have been giving a lot of time to this problem: How to educate the man who owns an automobile so he can distinguish and will patronize the man who is a legitimate merchant in motor accessories.

Robert Bland—Follow out Mr. Thorpe's suggestion and some day you will arrive at its application. It is staring you in the face. It is the standardization of service and the maintaining of that service.

The assistant secretary was instructed to send a letter with a postal for answer asking members if they would devote sufficient time to interview, during the next thirty days, one garage man and try to induce him to join the association and attend the next meeting.

A short talk was made by a representative of the Fidelity & Casualty Insurance Company on insurance of garages against hold-ups. It seems this business is being written in Chicago only.

A report was submitted showing that the Chalmers company would recognize membership cards in the association and allow discounts on parts.

The meeting then adjourned.

### MICHIGAN GARAGE INSURANCE.

After nearly a year's hard work on the part of the insurance committee of the Detroit Automobile Trade Association, the chairman of this committee, F. A. Bean, operator of the Grosse Pointe Garage, 4283 East Jefferson avenue, succeeded in perfecting plans whereby the members of the association could reduce

the cost of their insurance by points of credit for safeguarding the garage, making it possible to reduce the cost of compensation insurance nearly 50 percent, and effect a saving of over 25 to 40 percent on fire insurance.

These insurance benefits have been worked out for members. They are not mere promises. They are actual facts, as the committee completed its work several months ago, the last details being completed April 26. A number of members have taken advantage of this insurance saving, but those who have not can secure full information on fire insurance by corresponding with M. J. Dorsey & Co., 208 South La Salle street, Chicago; and full information on employer's liability, workman's compensation and automobile insurance by corresponding with McDonald & Waltenberger, 704 Free Press building, Detroit.

### NEW CHASE MODEL.

The Chase Motor Truck Company will have a new model known as model X, a 3-ton worm-drive job to retail at \$2,800, equipped with cab. This new model will round out a line of Chase worm-drive trucks of ¾-ton, 1-ton, 3-ton and 3½-ton carrying capacities.

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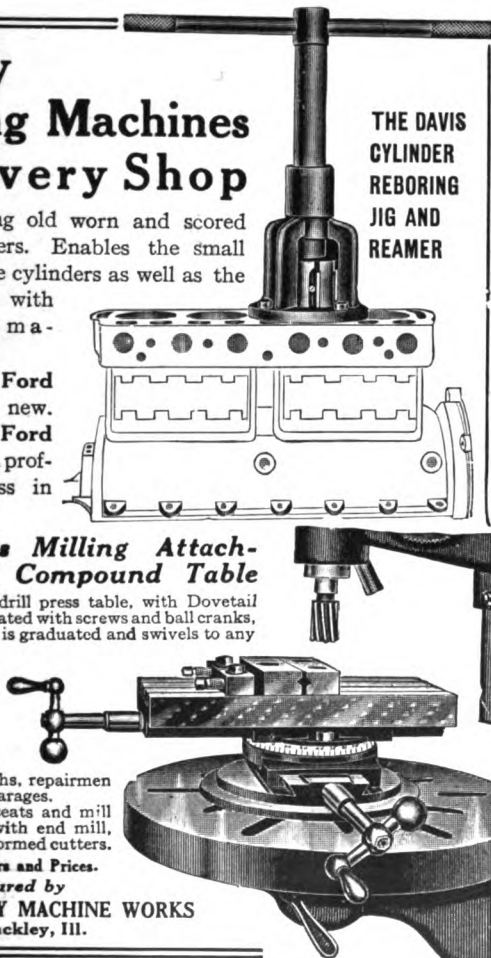
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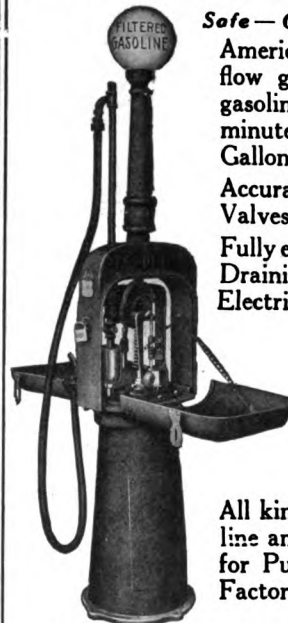
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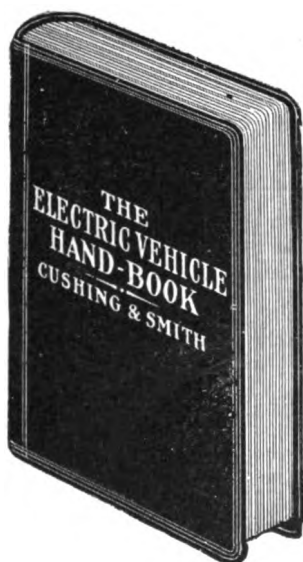
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—“The True Light Weight” piston. Strength and durability greater than cast iron. Weight reduced

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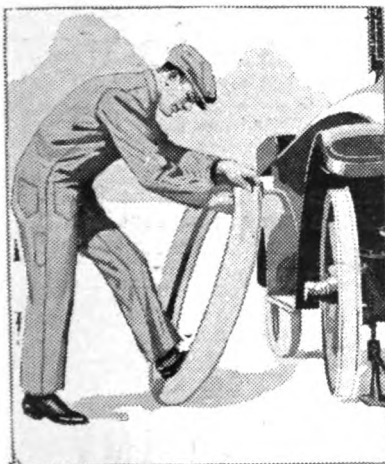
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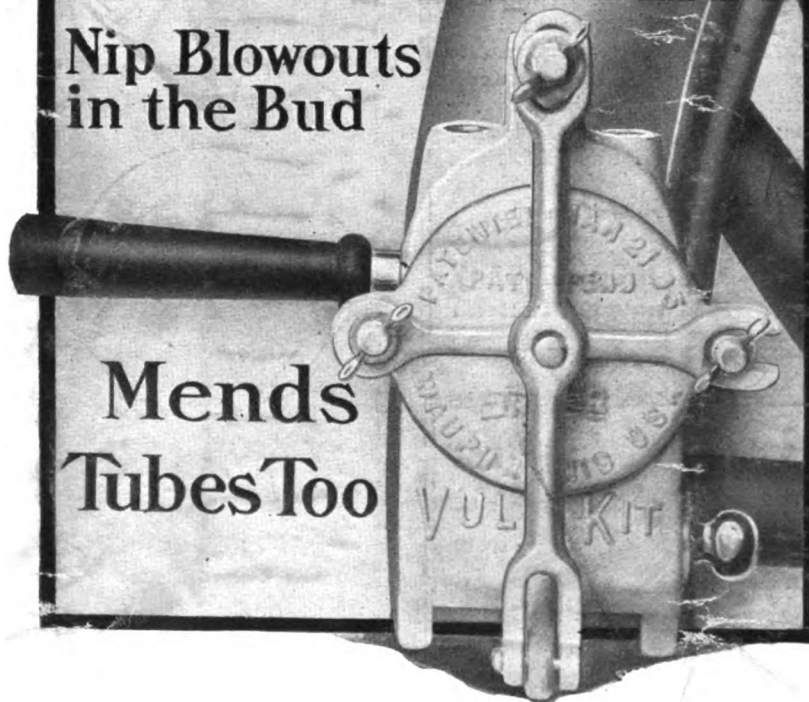
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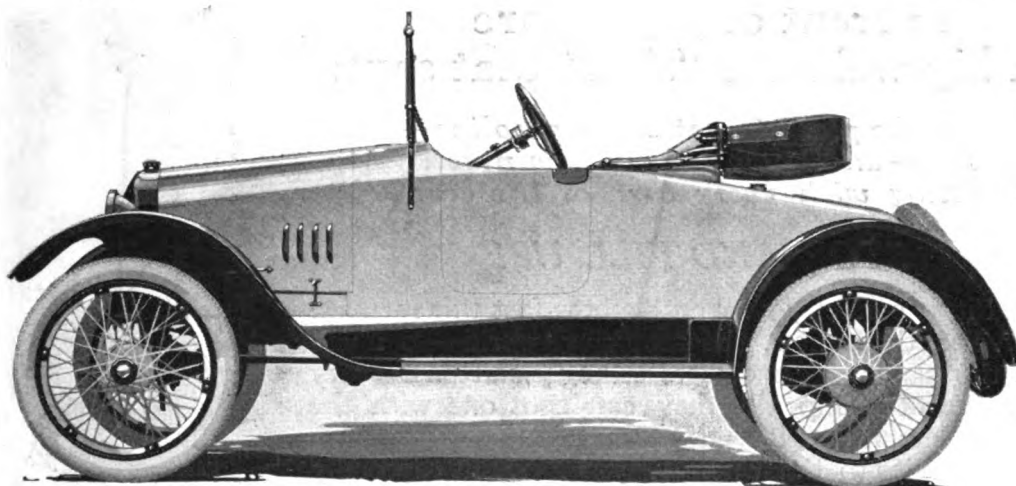
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Volume III

CHICAGO, SEPTEMBER, 1916

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THE OFFICIAL PUBLICATION OF THE  
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Doesn't seem to bother  
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in front of your Store  
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*Send for our circulars.*

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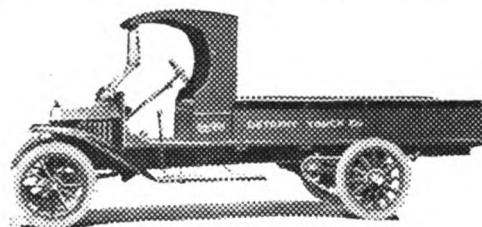
134 Canal Street - - Fort Wayne, Indiana  
Canadian Office: No. 1 Wabash Ave., Toronto, Ont.



THE WAYNE MONARCH

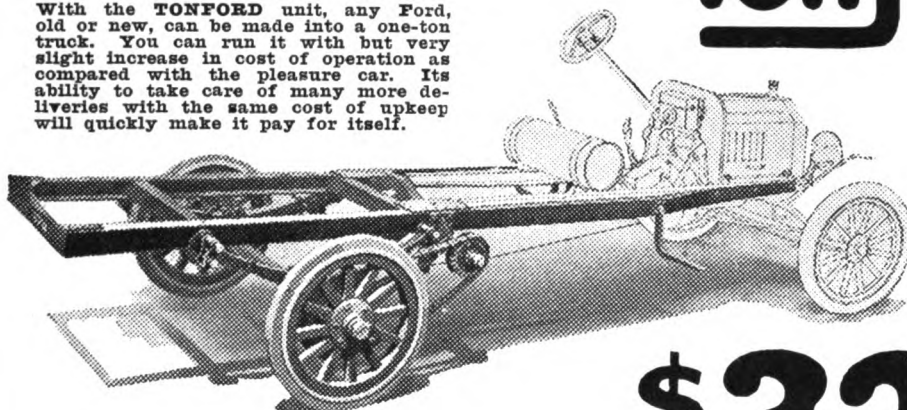
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The TONFORD unit fits on the frame of any Ford car, converting it into a one-ton truck with a 127-inch wheelbase and a loading space of from nine to eleven feet back of the driver's seat, and up to six feet wide, depending on the style of body.

The TONFORD sells for \$325.00. You can now buy a new Ford Chassis for \$325.00. The TONFORD truck unit is easily attached without changing the chassis in any way. Simply drill four holes and bolt the two frames together and you have a dependable one-ton truck with the Ford ease of control and economy of operation.

Dealers: We want representation everywhere. This is surely the "universal" truck. We are making prompt deliveries. Get in touch with us at once.

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# AMERICAN GARAGE AND AUTO DEALER



DEVOTED TO THE INTERESTS OF THE GARAGE OWNER, AUTO REPAIRMAN  
AND AUTO DEALER, AND THE EDUCATION AND ELEVATION OF THEIR CRAFT

Published Monthly by THE AMERICAN ASSOCIATION OF GARAGE OWNERS

Vol. II.

CHICAGO, SEPTEMBER, 1916

No. 4

CHAS. M. CARR, Editor and Manager  
IRWIN D. GROAK, Technical Editor

CHAS. C. BOMBAUGH, Law Editor  
J. R. HASTIE, Advertising Manager

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## THE AMERICAN ASSOCIATION OF GARAGE OWNERS, INC.

A corporation not for profit organized under the laws of Illinois.

General Headquarters, Chicago, Ill.,  
537 S. Dearborn Street, Telephone  
Har. 8160.

New York Office: 30 East Forty-  
second Street. F. L. Hadley, Man-  
ager.

Detroit Office: 901-902 Kresge Build-  
ing. Robert M. Smith, Manager.

### Objects of the Association

Section 1. To carry into effect, in the operation of the business of our members, the idea embodied in the slogan, "Safety First," in order that membership in the association will insure to the public that quality in service in repair work and service identical with the highest safety and values.

Sec. 2. To devise ways and means of establishing standards of safety and values that will be in harmony with the cost thereof, and of lowering costs to members and patrons.

Sec. 3. To act together through the general headquarters of the association in such practical ways as to create an adequate standard of profits for members, consistent with the capital employed by them and the service rendered to patrons.

Sec. 4. To promote by every means in our power measures and legislation which will give to our members the same legal protection which is now enjoyed by the building material trades, hotelkeepers and others catering to the public in like manner.

Sec. 5. To unite individual garage owners and associations of garage owners in a central body for the improvement of business as repair men, livery men, and dealers.

Sec. 6. To cooperate with other organizations having similar aims.

Sec. 7. To secure and disseminate to persons and members identified with this association all legal and other proper information which may be of value to them in the prosecution of their business as public garage owners.

Sec. 8. To publish such magazines, periodicals, bulletins, etc., as may be required from time to time for the purpose of supplying vehicles for the dissemination of such information as referred to in the preceding section.

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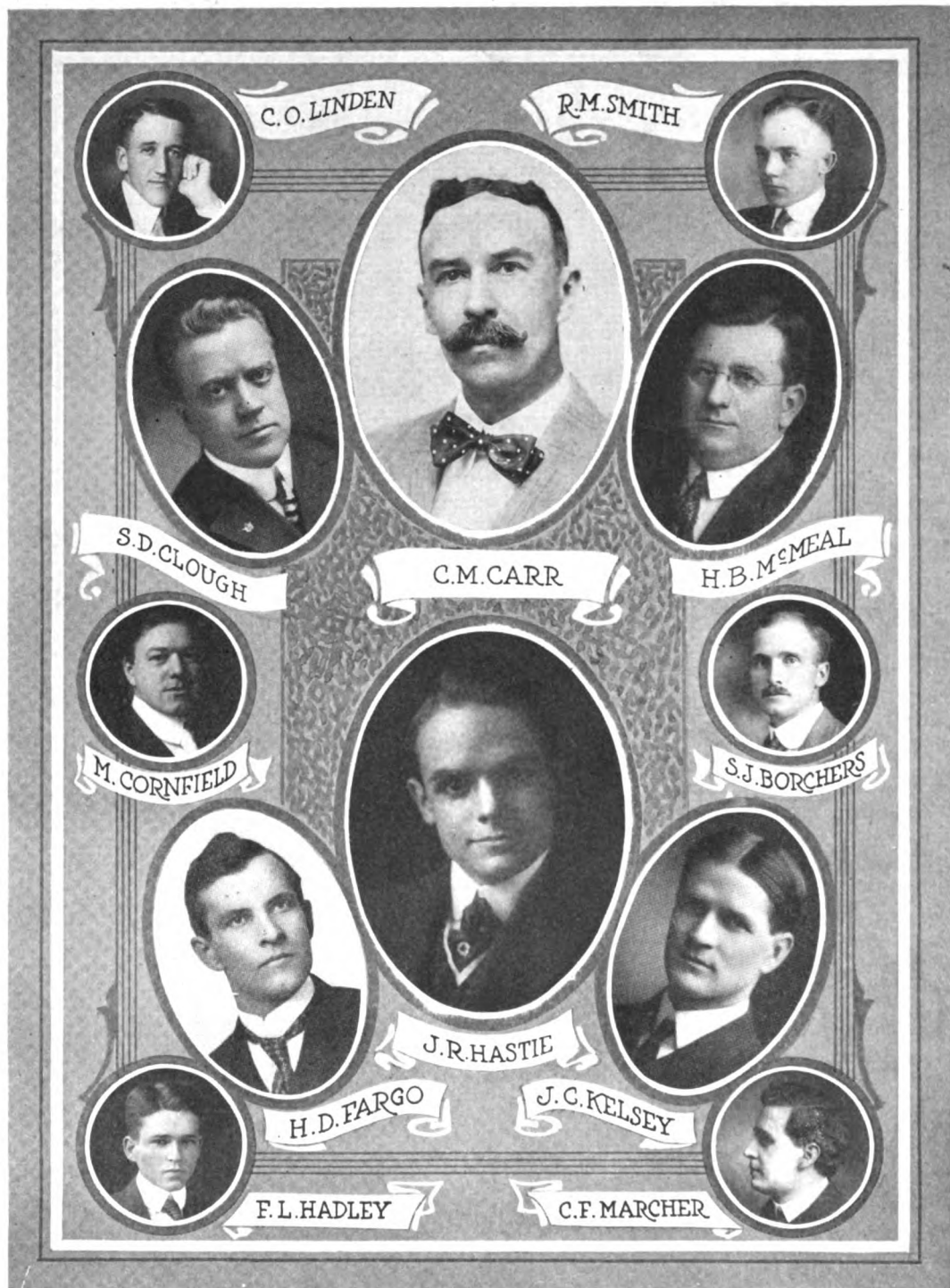
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"To Live and Let Live."  
"One for All and All for One."



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In charge of the organization work of the A. A. G. O. and Manager of the Field Corps, which will embrace 40 men.



# AMERICAN GARAGE AND AUTO DEALER

Vol. VII No. 4

New York — CHICAGO — Detroit

September, 1916

## A Message of Today

**A**TENTION, brothers, comrades, friends. My message to you from the front page of your official journal this month is important.

We, the A. A. G. O. hosts, are ready for ACTION—vigorous, militant, persistent action—on behalf of those things about which we as garagemen, repairmen and dealers have thought, hoped for, planned, for many months. Deeds, not words, symbolize and express the practical, the workable, the concrete.

We have passed through the formative period, the era when words paved the way for action. True, we have ACTED day by day, as occasion has required, creating and distributing benefits for the craft, but essentially we have thought, hoped and planned.

Now the onward movement comes. The "Forward, march!" era has arrived. The battle lines have formed. We have a definite program of achievement marked out. We will continue to think, hope and plan, but the emphasis, the predominant impulse, from now on will be that of ACTION.

Let me say to every reader of this journal, every member of our craft, that he should read every line on every page of this issue of the journal, then do his full part in starting our great campaign for protection, cooperation, betterment.

The petition campaign for lower gasoline prices needs your ACTIVE assistance. Congress reassembles in December and it is then when the A. A. G. O. should be able to lay before that body petitions aggregating one million or more names urging the passage of laws to free the petroleum oil market from the clutches of monopoly. Each of you will do your part when you procure the signatures of 50 car owners to the petition and send it in to National headquarters.

Another proposition: The A. A. G. O. Interinsurance Department is now ready for business. It represents the most comprehensive and sweeping reform of insurance practice ever attempted by any organization of tradesmen in the world. Months of the most laborious work have been expended and the outcome has been interinsurance plans which will enable

members of the organization to obtain fire and all forms of casualty insurance at cost. Details are given on the Insurance Department page in this issue. Just think of it, friends: every form of risk you may encounter in your business or personally, (except the ordinary life risk) will be handled for you by your association with absolute safety guaranteed and an ultimate saving to you of one-third to one-half the present cost! But you must take ACTION in order to become a beneficiary.

Again: The standardization-of-prices-for-repair-work movement has reached the "action" stages. The price list has been announced and the motoring world is being notified. You should ACT—do your part—at once. Get the A. A. G. O. signs, display them, and be prepared to secure your full share of the tourist trade. It is yours by right—you deserve it.

More. The standardization of garage workers, a much needed reform, is here. The only thing needful to make it available is the cooperation of the craft with our Bureau of Registration and Employers' Employment Bureau. ACTION on your part.

ACTION—the word with a charm at this important juncture. ACTION will make the hard, painstaking work of your officers and leaders fruitful—make the instrumentalities above mentioned grow grain ready for the garnerers (yourselves). Besides, we all need training in ACTION. Next winter over forty legislatures convene and every one of them should be given an opportunity to pass a lien law for the protection of garagemen. Aye, more than an opportunity; they should and will be urged to enact this needful, just piece of legislation by their own constituents organized to put the "deadbeat" and "skip" out of business in the interest of the honest garagemen who give honest service and honest car owners who pay for the services they receive.

Summing up, let me say that "DEEDS—ACTION" are today's watchword. We have aspired, hoped, planned, formulated—our program of preparedness is well under way and in a measure complete—so now let's ACT!! Crowd this program of ACTION of ours through—a little more pressure each day—hold fast, keep at it, and we will win victory after victory until all our just rights have been won and our just claims vindicated.

*C. M. Carr*

Editor-Secretary

# The Editorial Point of View

## SEPTEMBER—AND OTHER MONTHS

In September, you will remember,  
The days of real sport as a boy;  
You were happy, though mother was catty,  
And you flirted with danger quite coy.  
Your chassis was strong and well-knit,  
Your engine and carburetor quite fit  
For all kinds of capers,  
Backed up by power vapors—  
Until father's clutch and brake  
Into the game did hit:  
Then—

Of course—

H—I was to pay!

## Headquarters Removal

THE National Headquarters of the American Association of Garage Owners in Chicago have been moved from 537 S. Dearborn street in the Elsworth building, to 53 W. Jackson boulevard in the Monadnock block. This change was made necessary by the INCREASE IN THE DEPARTMENTAL ACTIVITIES of the Association and the ENLARGED PUBLISHING FACILITIES PLACED BACK OF OUR OFFICIAL JOURNAL.

In separate editorial articles and display announcements the new work undertaken is quite fully set forth and photographic likenesses of the exterior and interior of the headquarters are printed therein.

It is in a way fortunate that a CHANGE IN STREET ADDRESS has been made. Other institutions having names similar to or suggestive of ours, are located on Dearborn street. We receive their mail and they ours, at times. Such confusion is exasperating and represents a waste of time, and is all the more irritating when it is known that there ARE NO OTHER INSTITUTIONS SIMILAR TO OURS in the garage field in point of jurisdiction, sweep of activity and general basic characteristics.

The new headquarters are a LARGE IMPROVEMENT over the old ones, are inside the "loop," and in one of the most prominent and high-class business buildings in the city. Members and friends are INVITED TO CALL when in

town. We want to meet you and to have explained to us personally the needs of the work in your state or town. WE BOTH CANNOT KNOW EACH OTHER ANY TOO WELL in view of the great work which has been mapped out for us to unitedly perform.

## "Deadbeats" and Frauds

THERE are many of them, we are sorry to state, who have plied their arts in the garage and repair shop trade; and that they have successfully plied these arts many of our members and friends can sorrowfully and reluctantly testify, so there is a quite universal demand for action of a protective character against these vermin.

As in other lines of activity, the A. A. G. O. measures up to its opportunity and duty in these before indicated premises. It has opened a "Register for Filing Reports of 'Deadbeats' and Frauds," frauds ranging from common, every-day garage bill jumping and skipping down to plain, unadulterated swindling, which have been perpetrated on an innocent, guileless garage public and reported by them and published in the AMERICAN GARAGE AND AUTO DEALER, and it, the A. A. G. O., will do its part in making the record and furnishing a bound volume (scrapbook effect) for a preservation of the record, properly indexed, for use as a ready reference work.

Now, men of the garage craft, it is up to you to help us make this "deadbeat," "skip" and fraud register one of the greatest protective agencies in our entire program of endeavors. You report the facts and we will publish them in such form as to find, in an orderly fashion, a place in the register.

Be sure of your facts; then there will be no danger of suits for libel. Should there be litigation as the re-

sult of this helpful protective work the journal could be the first and probably only point of attack, whereupon the Association's legal department will swing into defensive action. We simply rely upon you to back us up with the testimony which will make our defense good. The A. A. G. O. is in business to protect and help its members and is willing to assume any reasonable risk in performing its duties. "A faint heart never won a fair lady," neither has any association without a backbone ever done anything worth while, because in the presence of danger it shows the white feather.

With the active, militant co-operation of the membership and trade the practices of confidence men, "deadbeats" and swindlers can be ended in the garage field. Are you with us?

## Our Petition Campaign

MILITANT activity on the part of the A. A. G. O. and the garage trade of the country in behalf of national legislation begins NOW. It addresses itself to the one factor in our craft and industrial life which more than any other has menaced and continues to menace the very existence of our business—the exorbitant gasoline price.

The apparent drift from gasoline to kerosene and distillate, while promising some measure of relief, can be regarded as offering only a temporary palliative, because subject to the same monopoly control as gasoline and therefore productively potential of the same measure of extortion.

While the extortion practiced on automobile owners has not apparently affected the autocar and garage industry, it has not been the fault of the petroleum monopoly. The ruling prices have been so near the prohibitive line that nothing save better engines and

other economies and efficiencies have kept the present large number of cars in commission. In other words, all the economy of this nature introduced has been absorbed and offset by monopoly prices on gasoline.

Now that the garage men and their shop and dealer allies are organized, and becoming more so every day, the time is ripe for constructive, militant action which will **FORCE** the enactment of laws that will free the petroleum industry from monopoly and create a **NATURAL** market for its products, including those used for motor car fuel.

**LET EVERY GARAGE MAN, SHOP MAN AND DEALER DO HIS PART BY SECURING HIS QUOTA OF 50 CAR OWNERS' SIGNATURES TO THE A. A. G. O. PETITION**, the text of which is printed in another part of this issue. Here is an opportunity for every brother of our craft to do his fellows and himself a real service, and at the same time lay the foundation for future relations with Congress and the government at Washington which will be useful in the years to come. In a democracy like ours the right of petition is fundamental. It was assailed in the days of the second Adams, but he repelled the attack in a life-and-death struggle which resulted in its triumphant vindication and it has not been assailed since.

The petition mentions **FOUR MEASURES** as calculated to give the consuming public relief, and it puts the question of which measure or measures of the four we shall concentrate upon as best designed to carry into effect the laudable purpose sought **SQUARELY UP TO OUR NATIONAL CONVENTION**, to be held in Detroit early next winter.

Brothers, get into this petition movement. It will show your car owner patrons that you are fighting for **THEIR INTERESTS** as well as your own. Indeed, in this particular case their interests and pocketbooks are directly affected

while yours are reached and unfavorably touched only through their injury.

**THIS IS A CONTEST WORTHY OF OUR BEST METAL. LET IT BE A DEMONSTRATION OF OUR POWER OF INITIATIVE AND EXECUTION.**

#### A New Era for the A. A. G. O.

**T**HE American Association of Garage Owners enters upon a new era from this date, due to the enlargement of its activities and the supplementing of its facilities for action.

First of all, we have created a Department of Field Work of greatly enlarged dimensions and placed in charge of it a competent director. This means that no state, territory or province in the Union or Dominion, or part of either of them, will be without a field representative of this organization whose duties it will be to spread the gospel of co-operation, protection and service and enlist the support of all who properly belong in its ranks.

The new activities are important and far-reaching in their beneficent sweep and are treated elsewhere under separate heads. The new director comes to the Department well equipped, having been connected with the Association and its official journal since their beginnings. His selection was due to his comprehensive grasp of the field conditions and the acceptance of plans formulated and submitted by him.

In the Publication Department facilities have been added that are made clearly apparent in the present number of our journal. It is planned to make the publication grow as rapidly as the publicity and news requirements of the Association and the field it serves may warrant. To that end the secretary-treasurer has associated with himself in the conduct of the journal, either in active or advisory capacities, four of the ablest class journal publishers in the middle west. They have an enviable

record of solid achievements behind them, and with their assistance your secretary-treasurer will be given the aid he needs, both in insuring a rapid expansion and growth of the journal, but also in relief from multifarious duties and their detail which made him a much over-worked man and interfered seriously with his highest usefulness as a servant of the Association. He will now have more time to devote to purely Association work and will concentrate his efforts in connection with the journal upon its editorial, news and propaganda functions.

As respects the financial side of the problem, we are glad to state that arrangements have been made by your officers and their new associates to meet every contingency. While much depends upon the degree of loyalty which members of the Association and readers of the journal shall substantially evidence towards the work we are prosecuting so zealously and courageously—your ability to lighten the burdens and make the work more productive in every direction being enormous—we do not foresee anything ahead of us, judging by the record already made, other than success—continued, growing and ever-broadening success.

The backers of your Association—your principal officers at headquarters—have thus far advanced the money required to do needed work when the Association treasurer was bare of funds, having faith that later on when the work became more prosperous they would be reimbursed, and they and their new associates are prepared to continue this policy, foundationed as it is upon this same strong faith in the craft that they ultimately will be able to pay and will gladly pay the bills thus created.

Your officers have great confidence in you and in your future as an organized entity fighting for your just rights. They believe their confidence will be justified in the building, through you and this joint effort, of an organization that will stand second to none in im-

portance among the great trade and business associations of the land.

The record made thus far by the A. A. G. O. has been phenomenal. It is due in part to the imperative need for the work undertaken and the effectiveness of our journal in "carrying the message to Garcia."

**JUST THINK OF IT! NEARLY TEN THOUSAND MEMBERS AND SUBSCRIBERS LINED UP BEHIND THE A. A. G. O. BANNER IN THE SHORT SPACE OF ONE YEAR!!**

Has this record been duplicated anywhere else? Ask anyone familiar with association work and you will find this to be an unparalleled achievement in its class.

### Bureau of Registration of Automobile Workers

**O**N one of our advertising pages in this issue will be found an announcement certain to be hailed with gladness by the garage fraternity of the country.

The A. A. G. O. has entered upon a work that is calculated to render garage men a valuable service and relieve them of wearisome detail. What we propose is to ascertain for you who are the reliable, competent garage workers and send them to you when you need their services at a cost so small that it will scarcely be worth mentioning.

Beyond this the work will yield something of signal importance and value, namely, **THE STANDARDIZATION OF GARAGE WORKERS**, a fitting companion piece to the **STANDARDIZATION OF PRICES** for repair work. When cards are issued to workers, it will be only after qualifications have been proven and the individual's reliability has been clearly established. The A. A. G. O. card in the hands of a worker will thus **MEAN SOMETHING DEFINITE**. The worker will pay a comparatively small fee for this service, and the garage man in order to avail himself of the bureau's service will become a patron of the Employers' Employment Service of this Association.

Workers will be classified as ma-

chinist, machinist's helper, apprentice, office worker, washer, nightman and driver, and qualification determined by examination and investigation. Cards are to be good for one year only, at the expiration of which the worker must show a clean year's record in order to be able to renew his card. The card, as already intimated, performs the dual function of a character reference and certificate of qualification.

A. A. G. O. men will be able to help along the good work of this Bureau by urging their workers to join and carry the A. A. G. O. Registration Card and by referring all applicants for positions who have no card to this Bureau for examination, investigation and registration.

### Employers' Employment Service

**T**HIS service will be supplied to members of the A. A. G. O. at \$1.00 per year and to non-members at double this price. The employer buying the service is entitled to five successful calls upon the service for help for the \$1.00 fee and can repeat the service if he so desires. The plan is explained in more or less detail on one of our advertising pages. (It pays to advertise in this journal, and we are going to do our share of the advertising just as we expect others who have something to sell the garage man, shopman and dealer to do.)

Heretofore the Association has supplied, as far as possible, the wants of its members in respect to help free. It was unable to do more than register applicants and send them to openings when members made their wants known. The question of qualifications and reliability was not taken into account in any serious or thorough manner, hence the service thus rendered to our members, valuable as it has proven in many instances, has been far from satisfactory generally. By undertaking a systematic and standardized service as here outlined, its value will be so greatly enhanced, your officers feel, that

the additional cost of \$1.00 per member can scarcely be regarded as other than trivial. In other words, the ability to obtain **STANDARDIZED, COMPETENT AND RELIABLE HELP** to the extent provided for in the new plan at the small cost of \$1.00 is "a buy" so generous and worthwhile that it could not be offered save by an Association like the A. A. G. O. working on a co-operative service and not-for-profit basis.

### No Railroad Strike

**T**HE President and Congress **DID THEIR MANIFEST DUTY** in taking the only action open to them calculated to end the possibility of a nation-wide railroad strike. Having **AVERTED A CALAMITY** which threatened to make shipwreck of the greatest era of prosperity that has been enjoyed by our country in a generation, our chief executive and national lawmakers may well felicitate themselves over their **SPLENDID, ALMOST MIRACULOUS ACHIEVEMENT**. The President and Congress measured up to the requirements of **A GREAT EMERGENCY**.

The criticism of partisans and alarmists directed against the hasty passage of the eight-hour act is deserving of some consideration. Its assumption that the act is anything but an emergency and temporary measure is a false one and foundations all of the charges urged to make it appear that the President and Congress were **COERCED** and had thereby established a **DANGEROUS PRECEDENT**.

The true situation is that the strike has been averted in **THE ONLY WAY IT COULD BE AVERTED**, and now Congress and the President are left **FREE TO GO INTO ALL OF THE ISSUES INVOLVED**, to formulate, discuss and enact into law measures for **PERMANENT RELIEF**.

The justice of an eight-hour day or a 20 per cent increase in wages was beside the question when

action was taken. The problem dealt solely with the question of **KEEPING THE WHEELS OF TRANSPORTATION AND INDUSTRY IN MOTION**. As they are today in motion and the threatened industrial paralysis has been averted, all right-minded persons should be happy over the result.

The future may well be left to deal with **ARBITRARY DEMANDS, REFUSALS TO ARBI-**

**TRATE, SNAP JUDGMENTS, OFF-HAND DECISIONS OF MOMENTOUS QUESTIONS**, etc. We can wait on time when imminent danger is not present.

There is generally much hypocrisy and cant indulged in on the part of both parties to industrial disputes, it is well to remember. The fundamental error of the critics of the President and Congress, however, is that careful de-

liberative action forming the basis of a permanent settlement of an age-old economic problem could have been taken during the cataclysm of business and the agony of distress and ruin which would have attended a gigantic, nation-encompassing strike, and was not attempted, and wisely so, when the emergency law was **RUSHED THROUGH** to success in time to save the situation.

## Standardization of Prices for Repairs, Etc.

**The Big Campaign Against Extortion Begins—The Many Must not Suffer for Sins of the Few—Protect the Public and Win Public Favor—A Constructive Reform Fathered by the A. A. G. O.**

**T**HE A. A. G. O. campaign in behalf of standardization of repairs and storage charges applicable to tourists is now under way and the following schedule of maximum prices has been approved by the National Advisory Board of this Association:

	Towns	
	over 10,000	under 10,000
<b>Machinist (Class A)</b> .....	\$1.00	\$0.75
<b>Helper . . (Class B)</b> .....	.80	.50
<b>Apprentice (Class C)</b> .....	.40	.30
<b>Tourist } per day</b> .....	1.00	.60
<b>Storage } per week</b> .....	5.00	3.00

It should be borne in mind that these prices are **maximum** and members are not expected to raise prices if they are now charging less than the schedule, but should keep them in line with sound, healthy local conditions. The value of this campaign and the standardization of prices not alone serve to **protect tourists against extortion**, but to **direct tourist trade to garages operated by members of the A. A. G. O.** This is, therefore, a **business building proposition**, the appeal being made to the motoring public in the name of protection to their interests (which it is).

The signs to be displayed by A. A. G. O. members are the following:



This is a metal sign done in white and black on both sides. It is to be securely fastened by means of an L-flange and screws to the outside of the garage near the entrance. It is made of the best material obtainable and will last for years. Size, 9x18 inches.

In the window of the garage a glass transparent sign, black and white, 9x18 inches, should be used, like the following:



And in the office or driveway pennants like the following, in purple and white, made of the best felt, 12x30 inches, should complete the display:



Owing to the small membership dues of \$1.00 a year and journal subscription of \$1.00 a year, total \$2.00, which the Association receives from members, these signs and pennants will be furnished to

members in addition to their membership certificate, identification card and protection card, which are free, at prices a little above cost.

Their business pulling value will make the investment a productive one and we feel sure all members will so equip themselves that they will be in line for **their share of the new trade** this campaign is certain to produce—for who of the tourists will not gladly avail himself of the protection against the skyrocket grab-once prices of which we have heard so much and which the A. A. G. O. campaign is designed to protect him against, by patronizing A. A. G. O. garages?

Sign and pennant prices follow:  
**Metal Signs**.....\$1.50 each; \$3.00 value  
**Glass Signs**..... 1.50 each; 3.00 value  
**Pennants** ..... 1.00 pair; 2.00 value

The schedule of maximum prices having been adopted, the motor and automobile clubs of the United States and portions of Canada where the A. A. G. O. is represented will be notified **at once**.

A notice, suitable for posting on the clubroom bulletin board, will be sent to each club. It will be a conspicuous notice and will be conspicuously displayed because of its economic, money-saving value to every club member. The motor press and motor sections of the daily newspapers will be glad to give the matter publicity in the interest of reform and the protection of their hundreds of thousands of car-owner readers.



# Members Favor Standardization of Prices

**Most Members Are Charging Lower than Schedule Prices, Some Few Above—All in Favor of United Action—"Safety First" Means Honest Prices, First then Good Will and Good Profits—A Worthy Cause**

J. H. Earle, proprietor of the Central Garage, Anderson, S. C., favors the standardization movement, and in a letter to National Headquarters says:

"As to a schedule for adoption by our association for mechanical work and storage for tourists. I beg to advise you that I am fully in accord with same and hope you will adopt it and circulate such information to all touring clubs and route makers in the United States.

"As soon as the membership can be generally worked up, we should get out a folder to distribute to the touring public, giving them our association garages and their location for a guide to them in their travels. As soon as you get out the garage signs, we desire one to hang under our electric sign for the guidance of tourists."

Winston Auto Company, A. G. Winston, manager, Monterey, Cal., writes:

"Our scheduled prices for machinists is \$1 per hour and for helpers 50 and 75 cents. The storage rate is 50 cents for the first night and 25 cents each night after, or \$5 per month. I certainly wish you all success in this work."

M. J. Laporte, Holyoke, Mass.: "I believe it will be alright. It will make it much better when the prices are understood in every garage. There is no question but what it ought to bring in some business to the garagemen who belong to the association, and I will be glad to hear that a great majority of the garages have adopted the schedule of prices."

## A Big Step in Right Direction

Robert Hamilton, of the Hamilton Motor Company, Ben Avon Pa., gives their views somewhat at length, as follows:

"We heartily approve of your efforts to unify garage prices. This is a big step in the right direction which will be appreciated by all honest garagemen as well as car owners everywhere.

"We are located near the middle of five adjoining boroughs, a suburban district of Pittsburgh, where prices of everything except, perhaps, rent costs as much as in the city, and as Ben Avon is under the 10,000 mark, your schedule is rather low, and we suggest the following:

	10,000 or over	Under 10,000
Mechanics, Class A.....	\$1.00	\$0.80
Helpers, Class B.....	.70	.60
Apprentices, Class C.....	.45	.35
Storage, 75 cents and 50 cents a day; \$5.00 and \$3.00 a week is O. K.		

"We also suggest adding to the above washing cars and storing batteries:

Charging batteries—	
Tenants .....	\$1.50
Non-tenants .....	2.00
Washing car—	
Tenants .....	1.50
Non-tenants .....	2.00

"By tenants we mean parties who store their cars regularly, and non-tenants parties who bring cars to the garage for this small service, and by ordering a wash avoid paying anything for storage.

"Please get the ideas of others in this matter, and when prices are fixed a good idea would be a price card, uniform in style and wording, and headed: 'American Association of Garage Owners', hung in a conspicuous place in garage and office."

"This is a concrete case, showing strong reason for the wisdom of our organization such as the A. A. G. O."

## Pleased With Our Stand

The Galesburg Welding Works, Galesburg, Ill.: "We are most heartily in favor of the stand you take in this matter. Our prices at the present time are as follows: A No. 1 mechanics and machinists, 75 cents per hour; helpers, 40 cents per hour. The above are the only classifications we make, and the tourist pays exactly the same as the local people. We understand, however, that we are the only ones here in town

that get this price, the other garages getting 60 cents and 40 cents respectively.

"Moreover, we have all the work we can take care of at these prices and turn out nothing but the very best of work. We hope that other garages will fall in line with your policy and get what is coming to them consistent with good work."

Alfred E. Querinjean, proprietor Celina Auto Company, Celina, Ohio, adds his suggestions as follows: "Now, we have been doing business in a small town of not quite 4,000 for a number of years and have found it impossible to receive more than the following prices: Machinist (class A), 50 cents; helper, 30 cents; storage, per night, 50 cents, per week, \$1.50; washing, \$1.50. You will find these prices practically in every small town in this part of the state of Ohio, and a person would soon lose his customers by increasing these prices to the figures which you mention in your letter schedule."

As explained in our leading article on this subject, the prices recommended by the A. A. G. O. are maximum. Tourists who find the prices lower than schedule will not be disappointed or disgruntled. Local conditions should govern, but prices should not be higher than schedule on the ground that schedule prices are ample for every locality.

D. H. Lamberson, of Lamberson-Hunt Company, Oskaloosa, Iowa: "We are pleased to O K your schedule of maximum prices for labor, also for storage, with the exception of the weekly rate, which we believe is a trifle high. We should say that a maximum rate of \$3.50 per week should cover ample profit on the floor space in most any city."

M. R. Himes, of the United Garage Company, Toledo, Ohio: "Your schedule of maximum prices is entirely satisfactory to us; in fact, it is exactly the prices we are charging now with the exception of machinist. We are now charging 75 cents an hour for this labor."

## Perfectly Satisfactory

H. E. Lucia, of Lucia Brothers, Green Bay, Wis.: "The schedule you list would be perfectly satisfactory to (Continued on page 44)

## A. A. G. O. Publicity Protection Against Fraud

Galesburg, Ill., July 20, 1916.

American Association Garage Owners,  
Chicago, Ill.

Gentlemen:

Through the courtesy of your periodical in printing my letter of July 8th, and the most valuable assistance of Mr. Fouch of the Franklin Square Garage of Peoria, Ill., we were enabled to locate Mr. Kinkead and collect our account in less than twenty-four hours after the paper was in our hands.

We wish to thank you most heartily for printing the article and feel positive that this man has had his lesson, and hope your readers will continue to use this method for mutual protection against such frauds.

Yours fraternally,  
GALESBURG WELDING WORKS,  
Per C. R. Bradshaw, Proprietor.

### HAMILTON TO FORD

The Hamilton Motor Company, Ben Avon, Pa., writes:

"Use your pleasure with following letter to the Ford Motor Company. You are doing good work. We will help you.

"Ford Motor Company.—Gentlemen: Our location affords us opportunity for observation, and in the interest of the automobile business generally, make the following suggestion:

"A properly managed Ford agency, where parts and competent labor can be obtained at prices in accordance with the highest morality in business, is very much needed in this section.

"We are on the Lincoln Highway, about eight miles west of downtown Pittsburgh, Pa., and from the great number of complaints of passing Ford owners, the 'Universal Car' slogan is getting to be a joke.

"We are not candidates for an appointment, but as members of the American Association of Garage Owners feel it is a public duty to make known conditions in our locality to the proper department of your house."

Mr. Hamilton does right in speaking up when conditions need correction, and this organization will be glad to render every assistance in obtaining remedial action. Turn on the sunlight of publicity, brothers. The coercive power of enlightened trade sentiment is sufficiently potent to cause dilatory manufacturers to spend less time posing and more time *doing*.

### "SAFETY FIRST" AND THE AUTOMOBILE

The safest vehicle ever used by the public, operated by anything more rapid than oxen power, is the automobile.

While automobile accidents seem common, they are in reality rare when compared with the number of vehicles in operation and the number of people carried. Measured by "safety first" principles, the automobile is entitled to first rank as a safe as well as efficient conveyance.

The reason for this is easy to discover. No vehicle can be better controlled and is subject to so few conditions which make for accident and disaster. Nearly ever untoward condition encountered can be neutralized so that life and limb are not placed in jeopardy when the vehicle is carefully driven. The impression that prevailed regarding the dangers of automobile transportation should be corrected by garagemen and others interested in the auto car industry, in order that the true facts may be known and properly estimated.

In some respects, the dangers at-

tending automobile riding parallel those connected with aerial flights, a common impression about the latter being that the dangers are the greatest that attend any mode of transit. Statisticians tell us, however, that the dangers of aerial travel, as proven by carefully tabulated results, are at the minimum, and that false impressions have been given out by the press as the result of publicity in connection with deaths due to dare-devil feats by fancy performers.

It would, therefore, be wise, it would seem to us, for those interested in the automobile and the aeroplane to get together in an effort to overcome misconception and develop sound public opinion in accordance with the ascertained facts regarding the safety of auto and aerial travel.

### BOOST FOR US AND OUR POLICIES

Rowland Connor is an old newspaper man and a trained booster for every good thing. That's why he boosts for good roads and the program of betterment advocated by the A. A. G. O.



He is secretary of the Elks' Club at Saginaw, Mich., and gave National Organizer Chase valuable assistance when recently he visited the lumber city of Michigan's northeast.

### WINDOW SIGNS FOR BOOSTING BUSINESS

One of the most effective means of boosting business is a window sign that can be changed from time to time to meet the publicity conditions of the garage or accessory store.

Newspaper advertising and other forms of circulating publicity should be



utilized to a greater or lesser extent by all garagemen and dealers, but the principal advertising upon which most of our craftsmen depend is sign advertising on the outside of the garage or in the window, which attracts the notice of passers-by.

We have printed a number of articles on the value of electric sign advertising and the points brought out are so generally conceded that very few garages are without an illuminated sign of some sort which has a far reach after the sun goes down. The accompanying illustration shows a sign of liberal dimensions, with large and small letters, enabling the garageman to tell his story effectively in the window.

The A. A. G. O. has established a Sales Department, through which simple articles of general use to garagemen will be sold at special members' prices—no merchandise for resale, but articles for garagemen's use. The above sign is 23 by 27 inches in size, is made of good material, and has room for 18 lines. The sign is accompanied by containers for 700 small letters and 200 large letters. The regular price of this sign, which is being widely sold throughout the country, is \$6, and this will be our price to non-members. Members' price, \$4, cash with the order, or orders may be placed with field representatives of the A. A. G. O., should they happen to call on you when you are ready for action.

It is authoritatively stated that gasoline can be produced by the Rittmann process at a cost of 6.9 to 12.8 cents per gallon, according to the price of crude oil. There are twenty factories listed to use this process.

### A MOTOR CAR PIONEER

Forest J. Alvin, the new general sales manager of the United States Motor Truck Company, at Covington, Ky., recently enlarged to a million dollar corporation, is one of the real pioneers



in the motor car industry. Until the recent purchase of the New Era Engineering Company of Joliet, Ill., by the Elgin Motor Car Corporation, Mr. Alvin was president and general manager of that concern.

He is a graduate of the bicycle manufacturing business, and has been at all times active in the automobile world since the birth of the industry, in the late '90s. Additional to his general sales experience, he is also an astute purchaser of materials and parts, and is considered one of the leading production men of the country.

Mr. Alvin was president of the Auto Trade Credit Association twelve years ago in New York City, and also president of the New York Export and Import Club. The fact that Mr. Alvin enjoys an extremely widespread acquaintance with automobile dealers and distributors from coast to coast makes his acquisition by the builders of the U. S. motor trucks one of extreme value to them.

Mr. Alvin assumed his new duties August 15th.

### A GOOD IDEA

Write for the manufacturers' propositions to dealers and garagemen found in their ads in this issue, whether in the market for such goods or not. You should have the information *now* so that you can act with intelligence regarding them when you are ready to buy.

### WARNOCK ACQUIRES LIBERTY AGENCY FOR SIOUX CITY

The W. M. Warnock Company, Sioux City, Iowa, which disposed of over 7,000 Ford cars in its territory during the past year, has relinquished the Ford agency, and will now sell the new Liberty Six. William Warnock, head of the company, when in Detroit recently, looking over the various lines that have been offered to him, closed the deal with the Liberty Company for their agency, which he will handle in connection with a large stock of accessories, parts and supplies on both a retail and jobbing basis.

Mr. Warnock did not make his decision alone, but before closing the deal wired for his sales and service manager to come to Detroit and confirm his good impression of the Liberty car. The Liberty came through all tests. Arrangements were speedily completed and the Liberty Company commenced immediate shipments of several carloads of cars.

According to Mr. Warnock, the fact that impressed him most was that the car represents long tried and thoroughly sound ideas. All of the men in the Liberty organization are men of mature automobile experience. Aided by the resources of manufacturers long established and experienced also, such as the Continental, Timken, Delco, and others equally well known, the Liberty, while a new car, is, after all, the result of old experience, and cannot be called an experiment.

### NORWAY A BIG AUTOCAR BUYER

Norway is a large buyers of automobiles as the result of prosperity which has come to that country during the industrial tie-up occasioned by the great European war. Most of the cars are supplied by the United States, while a few have been shipped in from Italy. The purchases cover the entire range of motor vehicles and include pleasure cars, taxicabs, delivery cars and motor trucks. While the total number of cars purchased is not large, it is said to be twenty times greater than in any year preceding the war.

### THE VALUE OF A CARBURETOR

With the "millennium" of engine construction apparently here, it is daily more obvious that the most perfect engine cannot do its work well unless the carburetor is equally efficient. The carburetor question is one of the most vital in car construction. Yet the tendency to hold equipment cost to the lowest figure frequently results in "heart-weakness" in the car, and failure to "put it over" in a big way. Carburetion is no longer a problem, except in cost, but is still a matter of

wide experimentation in the field. The best carburetor is none too good, and a poor carburetor is indeed a poor economy, offsetting and neutralizing the excellence and efficiency of all other parts of a machine.

### THE FORD TRACTOR

Reports from the tractor meet at Fremont, Neb., are to the effect that the Ford tractor was not a success. Henry Ford & Co. were there with a sample of their machine and a band of music, but it is stated that the machine could not qualify and was unable to turn over its six inches of dirt and thus become a real competitor of the other machines. The Ford people made no price on their tractor, but were there merely to exhibit their product.

The Ford tractor is a four-wheeled machine with an engine 4 and  $\frac{1}{4}$  inches 4-cylinder, rated at 20 horsepower and a draw bar rate of 10 horsepower. Its speed is said to be  $2\frac{1}{2}$  to 3 miles an hour plowing and 5 to 6 miles on the road. It weighs about a ton and is expected to sell at \$300 when actually placed on the market. Its mechanism is suggestive of the Ford car, for it includes the three-wheel magneto which operates head lights for night work, thermo-syphon cooling, disk clutch, and others; its drive, however, is by worm work gear.

### AT LINCOLN, NEB.

The Hebe Motor Company conducts a garage and auto sales business in the Nebraska capital city which are housed in one of the most complete structures used for this purpose in that state. The Hebe concern has a record of car



sales that is quite remarkable and in other respects evidences enterprise and ability far above the average. They are boosters for organization and, when the time comes for action in behalf of protective legislation for the garage and auto craft, this hustling, progressive firm will be on hand to do their full share of the work.

A number of English street railway companies are using motor buses as feeders to their regular tram service.

# What the Ferris Bill Will Do

**Congressman Scott Ferris Says His Leasing Bill Will Solve the Gasoline Problem—Sure to Be Passed by Congress Next Winter If the Garagemen Will Exert the Necessary Pressure**

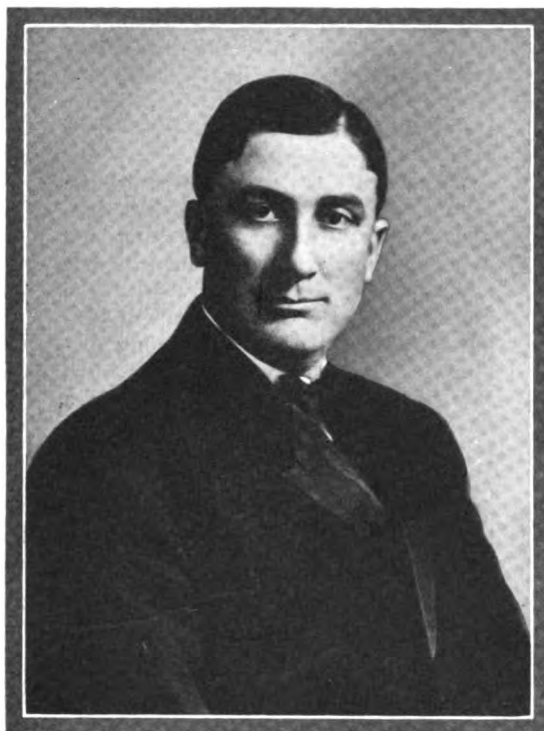
Congressman Scott Ferris, author of the Ferris general leasing bill, which will throw open millions of acres of government-owned oil lands to development, by leasing the same under proper regulation and restrictions to the public, is in Chicago during the present political campaign and has charge of one of the bureaus at Democratic National Headquarters in the Karpen Building.

Mr. Ferris is a man only 39 years of age, aggressive and progressive, and as chairman of the Public Lands Committee of the House of Representatives at Washington, he has formulated a number of elaborate, far-reaching and practical programs of development and conservation, among them being the plan to throw open for development the oil lands of Uncle Sam which are now, under present laws, locked up and of no use to the people.

Secretary-Treasurer C. M. Carr of the A. A. G. O. went into consultation with the congressman with reference to the Ferris general leasing bill and explained to him the campaign by petition which our Association is about to inaugurate as a part of its plan to solve the gasoline price question. Mr. Ferris was offered the assistance of the American Association of Garage Owners and its members throughout the country to help pass the Ferris general leasing bill. Whatever measures are decided upon at the coming convention of the A. A. G. O., it is almost unthinkable that the program adopted will not include work in behalf of the Ferris bill. Your officers therefore felt warranted in pledging the Association support to this important measure and believe that the convention and membership will uphold this action.

Mr. Ferris stated that the bill was known as H. R. 406. It provides that the Secretary of the Interior shall block off suitable areas of the 5,000,000 acres of oil lands now belonging to the United States, issuing prospecting permits to responsible individuals, each covering 2,500 acres, the permits binding the prospector to prospect for oil, and if the precious fluid is struck, a deed for 640 acres is to be given to the prospector. The remaining portion of the block will be turned back to the government as proven oil terri-

tory, which land is to be again leased by the Secretary of the Interior under safeguards against monopoly or manipulation in such a manner as to in any way control the price of petroleum products. Under the Ferris bill the government is to make no leases as the result of which full control of the lands is surrendered, this being one



**Congressman Ferris**

of numerous safeguards against the monopolization of oil production.

Congressman Ferris stated that these five million acres of oil lands were now the property of all the people and, roughly estimated, are worth \$400,000,000, according to the United States Geological Survey. Mr. Ferris said:

"The importance of this piece of legislation as a national conservation and defense measure can readily be seen when it is stated that every battleship of ours that floats the seas is equipped with oil burners, while the aircraft now so important an equipment of a modern army, and submarines which are indispensable as an adjunct to our navy, also use oil or gasoline as a fuel.

"The importance of this matter is further emphasized," continued he, "by the fact that geologists of the highest rank, including Dr. George Otis Smith,

director of the Geological Survey, state as a scientific certainty that the chemical and geological processes which centuries ago produced oil-bearing strata are now obsolete and that the oil these stratas now contain is all the oil there ever will be. It therefore behooves the people of the United States through their representatives to husband their resources of this character and keep them out of the clutches of monopolists and industrial pirates.

"Of the 5,000,000 acres of known oil land owned by the government, two reservoirs are to be held for the exclusive use of the Army and Navy and will not be subject to lease."

Regarding the outlook for the passage of the bill next December, Mr. Ferris said: "The bill has passed the House and was introduced into the Senate and referred to the Committee on Public Lands. It was reported out of committee and is now on the Senate calendar as unfinished business."

While the bill is manifestly fair and should receive the support of all disinterested senators, there are powerful interests fighting it. All manner of secret influences will be brought to bear, and the success of the bill, in the view of its friends, rests with the pressure of public sentiment, which can be exerted upon senators by their constituency.

The easy passage of the bill by the House, it appears, was more or less significant and prophetic of the fight that will likely be made upon it in the Senate, which has come to be regarded as the citadel of entrenched wealth and power. It may be stated, however, that the present Senate is more fairly disposed towards this measure than would have been any former Senate within the recollection of the present generation of citizens.

"On its merits, free from the powerful influences that can be exerted through so many channels against it, the bill will pass the Senate quickly and with scarcely a dissenting vote," said Mr. Ferris. "I am glad that the American Association of Garage Owners is alive to the situation and will lead a fight in behalf of this measure, which not only will conserve the interests of themselves and their customers, but

will benefit every consumer of petroleum products in this country and the government itself, whose Army and Navy are as vitally affected by oil and gasoline monopoly as the owners of trucks and pleasure cars.

#### Message to A. A. G. O. Members

"You may say for me to the members of your Association in my state of Oklahoma, and to those of every other state, that I am with them in their fight for a natural market for petroleum products, and assure them that in the program they have undertaken in their petition campaign they have made no mistake. I shall be glad to confer with the officers of your Association at any time and to render every possible assistance in accomplishing the purposes they had in mind when they conceived their brilliant and practical program in behalf of lower gasoline prices."

#### FIX YOUR OWN PRICES

The Joliet Welding Works is the pioneer of its field in that city and has seen many competitors come and go as the result of application of unsound business methods.

"I always fix the prices, and they are right prices, and that is why I am here today," said the proprietor to a representative of this magazine. "When the customer is allowed to dictate the price it generally is too low, because the customer's experience in these matters nearly always relates to jobs handled by blacksmiths or ordinary machinists, no account being taken of the gas used in welding cast iron and steel material. I charge for labor, material and service, which gives me a profit, and I always like to make the price before the work is done, so there will be no come-back. If I cannot get my price, I will not do the job. While I lose a customer once in a while, they always come back, and the outcome of such a policy is a permanent business, while those who have pursued the other policy have failed or obtained insufficient profits out of their business to make their venture a permanent affair."

The lesson of this man's experience is plain. First, service men of every character should fix their own prices, and such prices should be governed absolutely by cost plus a profit. Unless this is done, no permanent business can be established. Do not be afraid to lose a customer, because such losses on this basis mean a conservation of forces which will stabilize your business and make it a financial and enduring success.

#### TRACTOR DEMAND WILL BE 10,000,000 IN A FEW YEARS

Henry Ford asserts that the motor tractor business will be so large in a

few years that the automobile business will be crowded into second place. Henry is even quoted as having said that the automobile business would be a piker as compared to the tractor business.

Russia alone, in his estimation, will soon be in the market for 3,500,000 tractors, and every country of Europe will be large users of them after the war. Gaston Plaintiff, New York manager of the Ford Motor Company, who now is in Europe for a stay of a year investigating the possibilities for the tractor business and locating places for branch Ford tractor factories, has reported, so it is said, most excellent outlook for the future.

A member of the Texas automobile trade has stated that the Lone Star state would use not less than 350,000 tractors and what Texas will do other states will do in proportion to their area.

There are 7,000,000 farmers in the United States. Of this number one-half, at least, will use tractors, and many of them will use a quantity. It is estimated conservatively that the United States alone will consume 4,000,000 to 5,000,000 of these farming machines, and this number, with what foreign countries will use, will give a market for upwards of 10,000,000 tractors within a few years.

All of which means, if one-fourth to one-half of this is true, that the garageman should get into and stay in the tractor business, not only as a repairman (as most of them are), but as a dealer.

#### A LEADING HAWKEYE GARAGE



The above shows one of the leading garages in central Iowa. It is operated by the Crowe Auto Company at Boone. Mr. Crowe is a live wire in this business and enjoys a steadily expanding patronage. He has been a supporter of the A. A. G. O. movement from the beginning.

#### POWER DISTILLATE AS A SUBSTITUTE FOR GASOLINE

Recent experiments in the use of power distillate as a motor car fuel are most encouraging and will be of interest to those who are restive under the present high cost of gasoline. The distillate can be obtained at one-third the cost of gasoline, which represents a tremendous saving.

One experimenter reports that he traveled 4,200 miles in a Saxon Six, 1916 model, in three months, using power distillate in place of gasoline, and having no use for gasoline except in very chilly weather, when a gallon or two of the latter was employed to start the motor. During all that time he had no cylinder head off, nor did he need to clean a spark plug. This experimenter states that in summer weather the starting is as easy with the distillate as with the gasoline. The distillate is quite heavy, testing 45.3 Baume.

A great many cars in Colorado, Utah and the mountain country are using distillate in a mixture with gasoline, half and half, and are thus reducing their operating cost. It is stated that a Saxon Four, with a simple Meyer carburetor with a hot air intake works splendidly on a half-and-half mixture in the winter and on distillate alone in the summer.

The use of distillate in the winter is a little more troublesome than gasoline, but it works perfectly after the engine is warm enough to keep the fuel warm. A few drops of gasoline in the priming cocks makes the engine start easily. In the Saxon Six, already referred to, a Rayfield carburetor with a hot air intake and a hot water jacket was used. In a few minutes after starting the jacket becomes hot and then distillate works fully as well as gasoline in non-jacketed carburetors.

#### 24 INDUSTRIES HAVING INTER-INSURANCE

It would be quite unusual if the garage owners of America continued to be practically the only important trade association without an insurance organization of its own. Nearly every large industry or trade in the United States has met the situation which we have faced up to this time of suffering from unjust discrimination in rates and coverage, and has solved the problem by taking advantage of the cooperative spirit and effecting an insurance organization to obtain protection at something like cost. Among the better known of these industries we find the following:

Canners	Contractors
Wholesale grocers	Laundries
Lumbermen	Millers
Lumber mfrs.	Dry goods
Auto owners	Bankers
Coal operators	Cottonseed oil mfrs.
Brewers	Bakeries
Clay products	Wholesale clothing
Publishers	General mfrs.
Dairies	Plumbing and sanitary supplies
Ice cream mfrs.	Saw mills
Ice mfrs.	
Druggists	

Steps are being taken to merge the Columbus, O., Garage Owners' Association and the Columbus Automobile Trade Association into one, under the latter name.



## Big Campaign for Low Price on Gasoline

The American Association of Garage Owners, metaphorically speaking, has taken off its coat and will lead the garagemen in a fight for fair and honest gasoline prices, based upon actual rather than artificial values. There is not the slightest doubt but that gasoline prices are controlled arbitrarily by monopolistic interests and that relief can be brought about through legislation which will neutralize and offset this monopolistic power.

### Petitions to Be Circulated

The A. A. G. O., therefore, has had printed petitions which will be put into circulation by the field force of the organization, its officers and members throughout the country, asking Congress to pass one or more of the following bills now before either the Senate or House of Representatives at Washington:

1. The Howard Bill, to prohibit the exportation of gasoline.
2. The Steenerson Bill, to authorize the Federal Trade Commission to fix reasonable prices on this product.
3. The Ferris General Leasing Bill, to allow the development of millions of acres of government oil land.
4. The Export Tax Bill, to discourage the exportation of gasoline to foreign countries by taxing it when it leaves our shores.

Now is the time for garagemen, shopmen and dealers to get into a fight for the relief of their industry from an extortion which has threatened its very existence. The menace is still with us, although the price of gasoline has receded about 2 cents within the past month. The fact that it can be advanced 4 cents next month, or even 6 or 10 cents, putting hundreds of thousands of cars out of commission, makes this proposed campaign one wholly in line with our "Safety First" slogan.

If every garageman in the United States will secure fifty signatures to the A. A. G. O. petition and forward same to national headquarters, *we will be able to present to Congress a demand for some sort of concrete relief in the name of 1,250,000 qualified voters of these United States.* Would Congress sit up and take notice? Indeed it would! It would very speedily pass the remedial legislation sought.

### Manufacturers and Jobbers Should Help

It is the plan of the A. A. G. O. to enlist the support of the manufacturing and jobbing interests in the automobile trade and the influential factors in all of the allied trades in behalf of this important movement. Not only that, but we intend to put on record

every firm or company catering to the garage and retail auto interests. They are either *with us* or *against us* on this proposition. If they are with us, they will be willing to *say so*; if they are not, they will remain silent.

It is not proposed to boost any foolish program or to act precipitately, but rather to deliberate carefully on the particular measure to demand of our law-making body at Washington. To that end the agitation will be carried on during the coming months and can very properly culminate at the A. A. G. O. convention, to be held in Detroit early in December, when representatives of the garage, shop and dealer trade can choose the particular bill or bills best suited to accomplish the desired purpose.

The garage and retail auto industry is a comparatively new one and, to the best of our knowledge, this is *the first time they have been given an opportunity to rally to, the support in a national way to any proposition designed to give them relief from oppressive and intolerable conditions.* We have every confidence that they will respond to the call now being made, thereby putting themselves on the map as an organized, militant force in trade affairs that will hereafter have to be reckoned with.

### Garagemen Enthusiastic Supporters of Movement

The message has already gone out to a few of the captains of the garage army, and the replies thus far received have been enthusiastic in behalf of the present movement. This indicates to us a general rallying to the colors and an enthusiastic and combined assault on the breastworks of the enemy that will mean terrific execution. Let the battle lines form with the determination on the part of us all to win. We have everything to gain in making the fight and nothing to lose, because prices that have jumped from 8 to 22 cents in two years upon a mere pretext for a cause could scarcely be more arbitrarily and damagingly manipulated.

*Those in a position to know best are of the opinion that conditions during the past year have never warranted more than a 10-cent price for gasoline to the consumer, and that the enactment of the proper legislation would restore prices very shortly to a normal basis.*

BROTHER GARAGEMAN, GET BUSY. If you do not receive one of these petitions within the next week or ten days, send for one to national headquarters.

A presidential campaign is under way, the political pot is boiling, so why should not the garageman and his

### Garage Owners Open Fight on Extortionate Rates

#### American Association Is Preparing Schedule of Prices That Will Be Strictly Adhered To

The American Association of Garage Owners, with national headquarters in Chicago, has inaugurated a nation-wide campaign against extortionate charges as practiced by some few garagemen on automobile tourists.

The association stands for a square deal for the car owner, whether at home or on tour, and is about to establish maximum prices for repairs and storage to govern all garages holding membership in this association, from Portland, Me., to Portland, Ore., and from Marquette, Mich., to El Paso, Tex. Tourists have only to look for the A. A. G. O. sign on the garage to be assured that these maximum prices, or lower ones, prevail therein.

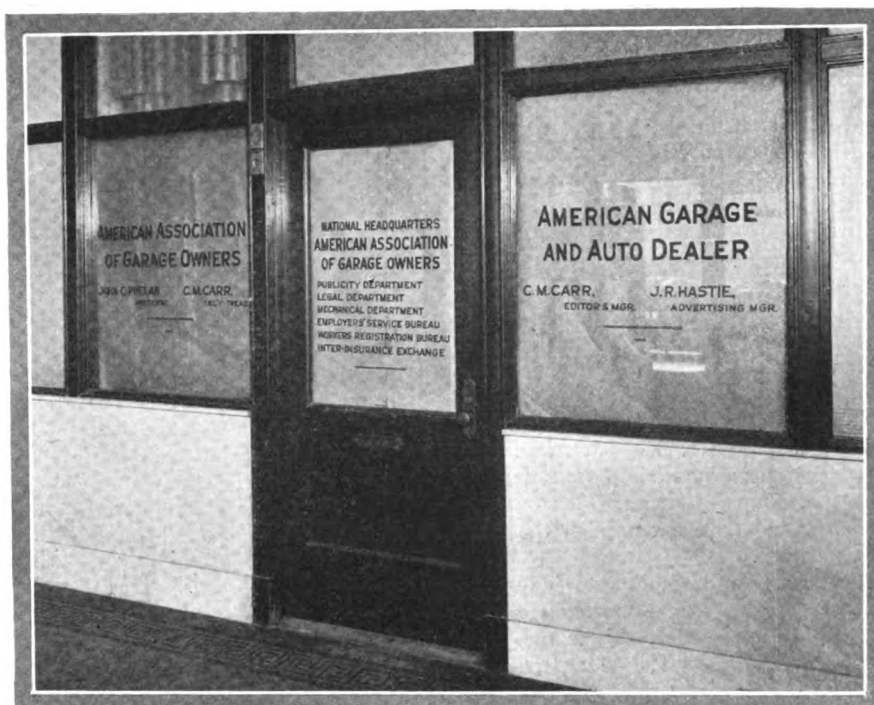
"The time has come for the garage trade to refuse to bear the odium heaped upon us because a very small number of our craft delight to 'put it over' on all strangers that come along," said Secretary-Treasurer C. M. Carr.

"Most of us charge fair prices for our services and treat home and tourist trade with equal justice. The association is going to hold its members to a strict accountability and when the secretary of any automobile club reports that this schedule is being violated it will be investigated and if the member is found guilty he will be disciplined.

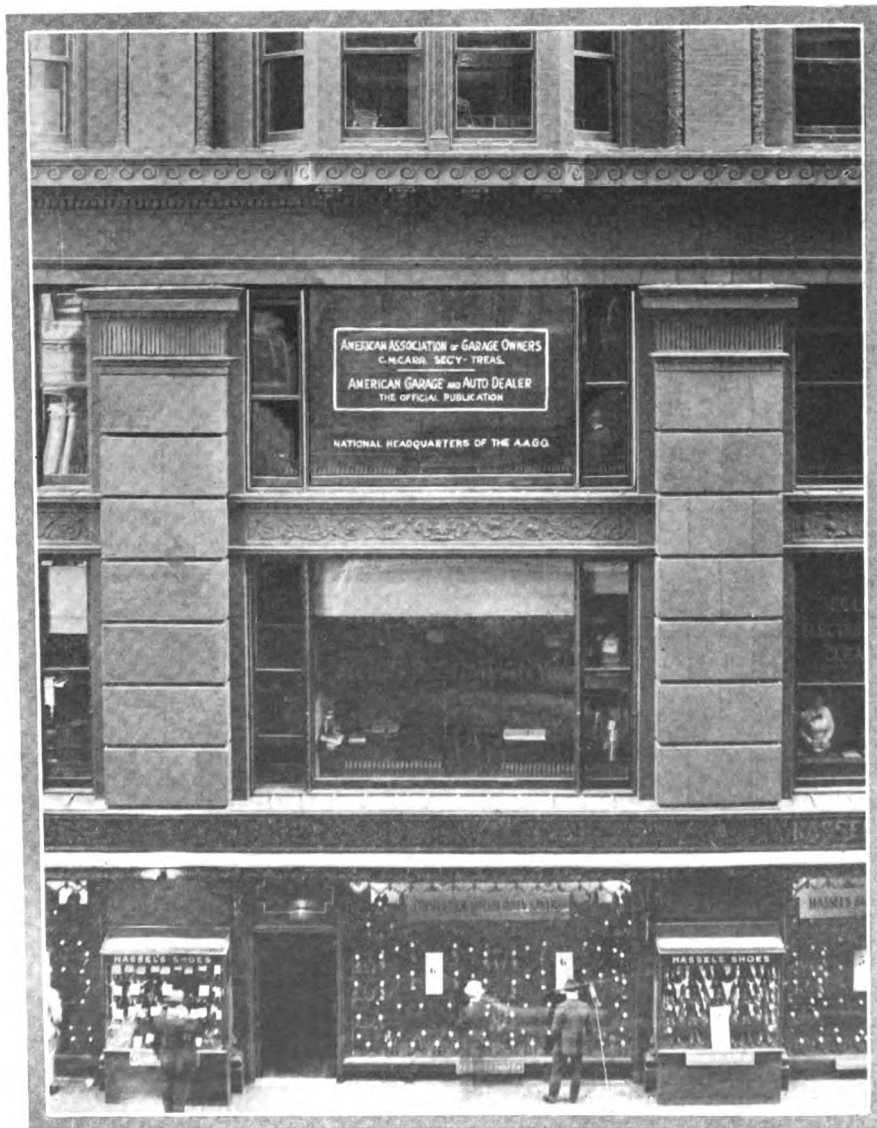
"The schedule of prices has been prepared and is being sent to members of the national advisory board for their final approval today. On hearing from the board members affirmatively the prices become effective at once and the motor clubs of the country will be officially advised."

Note.—The above appeared in the Chicago Herald, New York World, Denver Post and many other metropolitan newspapers during the past month, in preparation for announcing the schedule of maximum prices for tourists, which is to become effective at once.—THE EDITOR.

## NEW HEADQUARTERS OF THE A. A. G. O.



Inside Entrance to Office, 53 West Jackson Boulevard



Eighteen-Story Monadnock Block, Showing Position of A. A. G. O. Offices

repair shop and dealer ally get into the fray, and in so doing, promote their own just and righteous interests? Let us all put on our fighting caps and show our prowess by continued heavy cannonading until the right-price gasoline goal is reached.

## CONGRATULATES "A. G. AND A. D."

"Please accept our congratulations upon the very attractive way in which you handled the Omaha story in the August number of the AMERICAN GARAGE AND AUTO DEALER," writes E. V. Parrish, manager of the Commercial Club of Omaha, Neb., to Secretary-Editor Carr.

"The extra supply of the publication came and we are using them to good advantage. I have turned copies over to the local newspapers and they are giving quite complimentary notices on your story of Omaha.

"Whenever we can be of service to you and your association, do not hesitate to call upon us."

H. S. Gay, city clerk of Saginaw, Mich., writes: "I take this opportunity to express to you our sincere appreciation of the article contained in your August number, complimentary to our city and its relation to your work."

## FEATURE GARAGE FOR JOLIET

A new garage, 172 x 300 feet, 1 story high, is being built in Joliet, Ill., opposite the new Union Depot, by the F. Sippel Automobile Garage, now located several blocks northwest of this location. The garage will have a storage capacity of 150 cars and will contain an up-to-date showroom for housing a complete stock of accessories, tires, etc., also a paint shop. The Sippel company are agents for the Studebaker, Maxwell, Cadillac and Reo cars and are about to add a truck and trailer to their list of agencies. Mr. Sippel makes a specialty of selling new cars, doing very little in the second-hand car line. The new building will be ready for occupancy about the middle of October.

## UP TO DATE

"Pa, what is an alchemist?"

"An alchemist, my son, was an ancient philosopher who tried to transmute the baser metals into gold."

"Are there any alchemists these days, pa?"

"None of the old sort. The modern alchemist is trying to find a substitute for gasoline."—Birmingham Age-Herald.

The Cadillac Auto Truck Company, Detroit, Mich., has doubled its capital, and its plant and output will be correspondingly expanded.

# F. O. Lowden, Probable Next Ill. Governor

**Favors a Comprehensive Lien Law for Garagemen—In Interview with A. A. G. O. Man Shows Large Grasp of Situation and Sympathy with Garagemen's Defenselessness—Starts as Poor Farmer Boy, Now Leader of Men.**

Col. Frank O. Lowden, lawyer, soldier, farmer, national legislator, and popular citizen, now conceded to be in the lead for the Republican nomination for governor of Illinois, a commonwealth that is normally Republican and has elected but two Democratic governors since the Civil War, has gone on record with the National secretary-treasurer of the A. A. G. O. in favor of a lien law for Illinois garagemen. That is to say, Col. Lowden states that in the event of his nomination and election as governor, and a bill of this character is presented to him by the legislature, he will sign it because of its eminent fairness as a conservation and protective measure.

During his campaigns, thus far Col. Lowden has refrained from making pledges regarding the conduct of state affairs should he become governor, aside from those stated in his public platform of principles on which he is making his canvass, because he wishes to enter upon his duties as an official, "the freest and most unpledged man that has sat in the governor's chair for two generations." Hence the reticence with which he approached the subject under consideration. The fact that Col. Lowden and Mr. Carr (the A. A. G. O. secretary-editor) are closely associated in the Hawkeye Club of Illinois, the former being president and the latter chairman of the speakers' committee, and both charter members of the organization, made it easy for the two men to engage in a heart-to-heart discussion of this, to garagemen, most vital matter.

"The proposition is so eminently fair and just that I do not see how any honest man can be opposed to it," said the Colonel. "When the garageman takes in and cares for a car, protecting it against theft and the elements, supplies it with lubricants and fuel, repairs broken parts, or provides new ones, adjusts the mechanism to relieve friction, etc., he is performing a service for not only the car owner, but for the owner of the mortgage on the car as well, if there be one.

"As I look at it, the claims of the garagemen for such services should take precedence over all other indebtedness, secured or unsecured, on the same principle that the money spent by a receiver operating a railroad prop-

erty should be returned before any other indebtedness is paid and taking precedence over bonds, stocks and every other form of security for which the property and its earnings are liable."

On explaining the provisions of the New Jersey law to his lawyer-farmer friend, Mr. Carr was greatly pleased to



**Ex-Congressman Lowden**

note how quickly he grasped the situation and its true import, as evidenced in the above quoted remarks. "Who can be opposed to your proposed lien law?" he added. "Certainly no one who is willing that the garageman shall have a square deal, and anybody else is entitled to no consideration whatever."

When reference was made to the special laws for a long time past in force in every state, which give material men liens on buildings in which their goods enter and mechanics liens on structures into which their labor has gone, Col. Lowden said: "Exactly the same principle. You may state publicly in the official journal of your association (I am making no secret pledges or promises of any sort) that I am with the garagemen in their contentions, and if such a bill comes to me, as governor, it will be a pleasure for me to sign it, thus doing my part as a state officer to

give this influential and useful class of our citizens a just and proper protection of their legitimate interests."

Can we ask for more? Could a public spirited citizen with Col. Lowden's record and broad-minded characteristics say less?

Under our present laws, garagemen have a lien on a car for storage and repairs while the car is in his possession. When the car is taken out he loses his lien. The lien is subject to any mortgage or claim for purchase money that may attach to it. Losing possession of the car, the garageman's only remedy is to sue the car owner, obtain a judgment, then levy on any of the property the debtor may possess. This offers no protection whatever, as the class of people the proposed lien law is designed to reach is generally execution proof, with the title of the car in the name of wife or some other relative. The proposed law will give the garageman a *first* lien on the car, regardless of in whom the title is vested, and provides simple and speedy processes by which the claim can be converted into cash.

Frank Lowden was an Iowa farmer boy, taught country school, attended the Iowa State University, then came to Chicago and studied law. He became a successful practitioner and later a big factor in N. W. and Chicago University affairs. He moved to Ogle county about 15 years ago, where he has since operated one of the most productive and well-managed farms in Illinois. He has retained an office in Chicago, where he devotes a part of his time to special lines of legal practice. Col. Lowden served two terms in Congress and is well-equipped for gubernatorial service. His public platform pledges him to a business administration, including the splendid program recommended by the State Efficiency Commission—the budget system of appropriations, merit rule in the public service, etc. The platform also contains a strong good roads plank. Col. Lowden is a Spanish war veteran.

**Note**—This fine position, so frankly stated by my Hawkeye friend, is of more than passing interest to Illinois garagemen and I would feel that I had neglected my duty to A. A. G. O. mem-

bers in Illinois if I failed to make it known to them at this time.—THE EDITOR.

### FORD COMPANY GOES BACK TO DEALERS

The Ford Motor Co. has discovered that it is better to concentrate in the field of manufacture and wholesale distribution than to operate in the retail trade, hence they have given up their retail agencies and are establishing dealer distribution throughout the country. There will be 30 garage or dealer agents in Chicago and a proportionate number in the other large cities, with one to three dealers in the small towns and cities, according to population.

This is as it should be, and we understand that our garage people have been and are keen to obtain an agency for "the universal car." The Ford company insist upon first-class service and this includes a garage that is modern in every respect and kept clean and inviting.

### LITTLE GIANT TRUCK MAN HAS AUTO GAS SAVER

John W. Duntley, millionaire founder of the Pneumatic Tool Company and inventor of half a dozen pneumatic devices, besides supplying a considerable demand for trucks, hopes to reduce the cost of automobile fuel. He has brought out a fuel feeding valve, which takes the place of the carburetor, and, it is asserted, cuts the cost of operation in half.

"A young fellow had worked on it for four years when it came to my attention," said Mr. Duntley. "I financed him until the device was perfected. It has been tested over every kind of road and in all sorts of weather conditions. Carburetor experts all over the country have scoffed, examined it and been convinced.

"The fuel mixer will operate on either kerosene, or half kerosene, half gasoline. Personally, the best results were obtained on five gallons of kerosene to two of gasoline. No auxiliary heating device is necessary to vaporize the fuel before it can be used.

"We ran a light touring car from Whiting, Ind., to Chicago on one-half gallon of mixed gasoline and kerosene and a two-ton truck for eighteen miles on a gallon."

The Mitchell-Lewis Motor Car Co. has been reorganized and is now known as the Mitchell Motors Co., with M. L. McLaren as president. The new company controls the Mitchell wagon works also, in whose plant Mitchell bodies are made. The company is in excellent financial trim and in a good position with respect to raw material, of which there is a general shortage.

### IF THERE HAD BEEN A STRIKE

The threatened tie-up of the railroad transportation facilities of the country developed remarkable activity among taxi and truck companies. Wonderful preparations were made during the week preceding Labor Day, the date set for the strike, for the transportation of people and goods, not only about cities affected by the tie-up, but from them to distant points. The terrors of a railroad tie-up, it would appear from the showing made, would be greatly mitigated should one occur, because of the vast resources of the country that could be swung into the breach by the owners of motor-driven vehicles.

While the prosperity of the automobile industry would have been seriously affected by a nation-wide railroad strike, the bad effects would have been more or less offset by the increased demand for cars and the services they could perform in the work of keeping the wheels of trade moving. One of the early developments of such a strike would be motor truck lines of communication making regular trips for passengers and freight between Chicago and Detroit, Buffalo and Cleveland, New York and Philadelphia, Boston and New York, etc.

Of course, the accessory and tire trade would boom as the result of such activity and a species of unhealthy prosperity would be developed which, however great, could not fully compensate for a general collapse of business such as a general railroad strike would have precipitated.

Can afford to miss an opportunity to join the A. A. G. O.—Commercial Motor Car Company (Thomas R. W. Haines), Wilkes-Barre, Pa.

### A NEW GASOLINE PUMP

The big, new self-service gasoline pump in front of Votteler & Co.'s drug store, Bonnycastle street and Bardstown road, Louisville, Ky., is attracting wide attention. Motorist after motorist drives up alongside the pump, takes off his tank cap, takes down the pump hose, drops a silver coin into the pump slot and just helps himself without calling Mr. Votteler out of the store. Several tested their tanks afterward to make sure that they got accurate measure and found that they had.

This new pump is the invention of N. D. Hull, of Owensboro, Ky., and is the first one to be installed in Louisville—in fact, the first that has left the factory, and Mr. Votteler is naturally very proud of his getting the first in the country, and being the first in Louisville to install one. It has been the intention of Mr. Hull to place them all along the Dixie, Lincoln, and other highways for the convenience of motorists at all hours. The sign on the pump says, "Help Yourself." And you do.—N. A. R. D. Journal.

Hot water in a garage is a necessity where washing cars is an important item in the business. Cars can not be properly washed in cold water, therefore the hot water tank becomes a prime necessity.

F. W. Easterly has gone to Petrograd, Russia, as a representative of the Sterling Motor Truck Company, of Milwaukee, Wis., where he expects to work up a large business in trucks.

Glad to join you.—Gibbs Motor Car Company, Wilkes-Barre, Pa.



Home of the Kissel Kar, Marshalltown, Iowa, Member of the A. A. G. O.

# Fraud Order Against I. A. L. Stands

**Bidwell et al Permanently Enjoined—History of the Fight Against a Gigantic "Co-operative" Purchasing Swindle—A. A. A., Advertising Body and Local A. A. G. O. Combine to Bring the Sharpers to Justice—All Crooked Work Should Be Reported to A. A. G. O. Headquarters**

In making effective, August 9th, a fraud order denying the use of the United States mails to the International Automobile League, Inc., and the International Automobile League Tire Company of Buffalo, N. Y., and A. C. Bidwell, president of both concerns, the postoffice department has sounded the death knell of enterprises which government investigations show have victimized thousands of motor car owners in all parts of the country, and which was exposed in the columns of this journal several months ago.

"For years this league has been using the mails to obtain money by false representations and pretenses from automobile owners, dealers and jobbers of automobile supplies," said W. H. Lamar, solicitor general of the postoffice department. "The order which takes effect August 9th concludes one of the longest and most important hearings ever held by this office. The hearing occupied forty-six days and revealed a remarkable complexity and variety of unlawful practices employed by the president of the League and his agents, in exploiting the public."

The inquiry by the postoffice department into the business practices of the International Automobile League was requested, last March, by the Associated Advertising Clubs of the World, to protect motor car owners, as a part of the nation-wide campaign of the Advertising Clubs for truth in advertising and honesty in business. The data was supplied by interests represented by the A. A. A. and the A. A. G. O.

## Details of the Scheme

The facts disclosed by the government's investigations and made public only recently, reveal an elaborate scheme which has enabled Bidwell, as president of the "International Automobile League," to amass a huge fortune. It is shown that he employed agents, who solicited members for the league, representing that the league had contracts with manufacturers of standard automobile tires and accessories which enabled it to sell members such articles at dealers' and manufacturers' prices. The manufacturers of these products testified that no such contract existed. Through its agents, the league also represented that it could sell certain cars to its members at liberal discounts. The manufacturers of these cars told the government that the league could not obtain the cars

to sell at such discounts. To impress car owners with the league's buying power, agents are said to have greatly exaggerated the number of its members.

## Substitution of Cheap Stuff

It is revealed by the inquiry of the department that alleged "manufacturers' prices" on standard automobile tires and supplies were advertised merely as bait to secure a \$10 annual fee from members to whom the league might sell inferior tires and supplies at a stiff profit, as has been already set forth in these columns. League members testified that when they endeavored to realize the big savings promised by the prices listed on standard articles, they were informed that the league was "just out," but that an excellent article, manufactured especially for the league, could be supplied in place of the one ordered. When members complained, they were referred to a clause in the membership contract which specified that goods listed would be furnished when obtainable. "Crystal Oil" was a lubricant listed in the league's catalogue as being of "exceptional quality." Government investigation showed that this oil came out of the same barrels from which orders were filled for a cheaper grade.

Members testified that five or six years after they had paid their initial \$10 annual fee to the league, an attempt was made to collect \$10 for each of these years on the strength of a clause in the application making membership perpetuating unless resignation was filed by registered mail sixty days before the expiration of the membership year. Evidence showed that membership in the league carried no privileges except that of buying tires and other supplies from it at prices fixed by Bidwell, the president.

## Scheme's Gigantic Operations

It is shown by the official inquiry that about two hundred thousand dollars' worth of stock in the "International Automobile League Tire Company" have been sold throughout the country on representations that stockholders would be able to buy their tires from the company at factory cost and would receive enormous dividends because of the market provided by the league's membership. Not only was the number of league members greatly exaggerated in the representations

made to sell this stock, the official inquiry revealed, but evidence also showed that the tire company had never built, nor operated a factory, nor done business of any kind since its organization in the State of California, in 1912.

The inquiry revealed what the official fraud order characterizes as "illegal and unconscionable" expense charges of more than a quarter million dollars placed against the tire company by its president, Bidwell. It also shows that money was obtained from jobbers through a contract sold to them which purported to enable them to obtain from Bidwell standard tires at manufacturers' prices, but which actually bound Bidwell to furnish such tires only when obtainable. These contracts, it is shown, were sold to jobbers for prices varying from \$100 to \$1,000.

In addition to the action against him taken by the postal authorities, Bidwell has been indicted by the federal grand jury at Rochester, N. Y., charged with using the mails to further a scheme to defraud, and by the grand jury of Fayette county, Pa., with two of his agents, on a charge of conspiracy to defraud.

## Vigilance Committee Congratulates

Merle Sidener of Indianapolis, chairman of the National Vigilance Committee of the Associated Advertising Clubs of the World, who took the initiative in requesting the investigation, sent the solicitor-general the following telegram, on being advised of the action of the postal department:

"In the name of the Associated Advertising Clubs of the World and honest business, I want to thank you and your associates for the incalculable service which the postoffice department has rendered the public in closing the mails to the International Automobile League of Buffalo. The Advertising Clubs look upon the postoffice department as their strongest and most aggressive ally in their determined campaign for truth in advertising and honesty in selling."

The A. A. G. O. members in Pennsylvania who took such an active part in uncovering the Bidwell fraud are deserving of the highest praise from their fellow garagemen and dealers throughout the country.

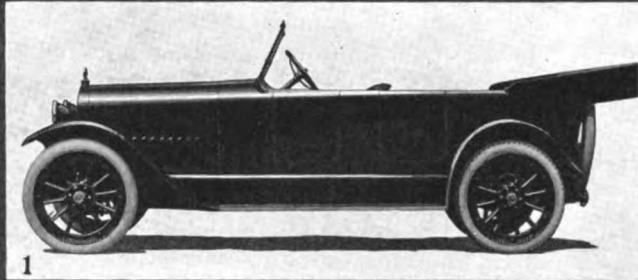
Get into the standardization work and win tourist trade.



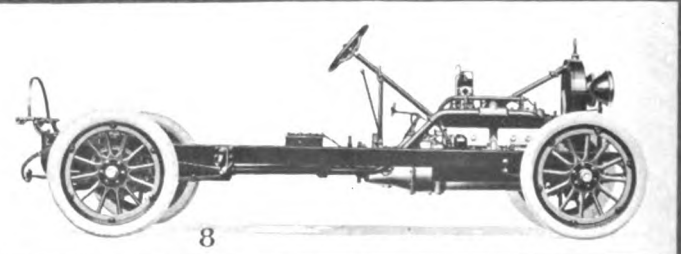
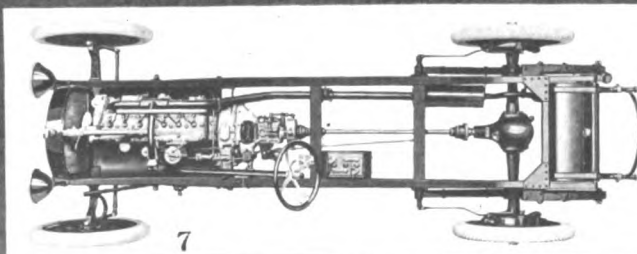
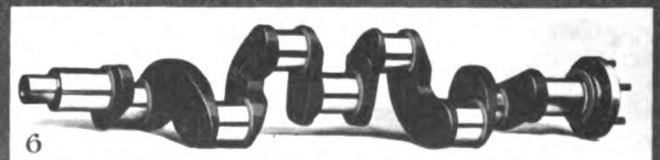
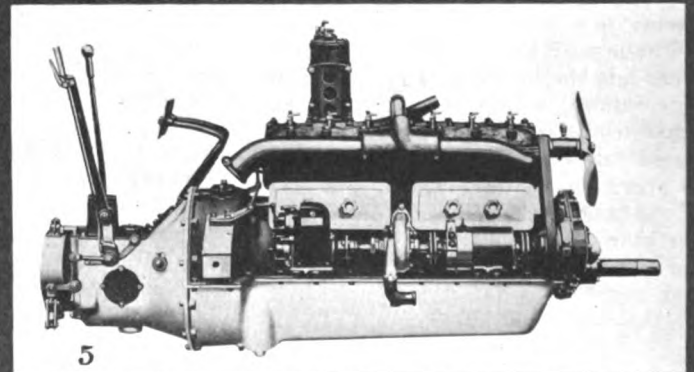
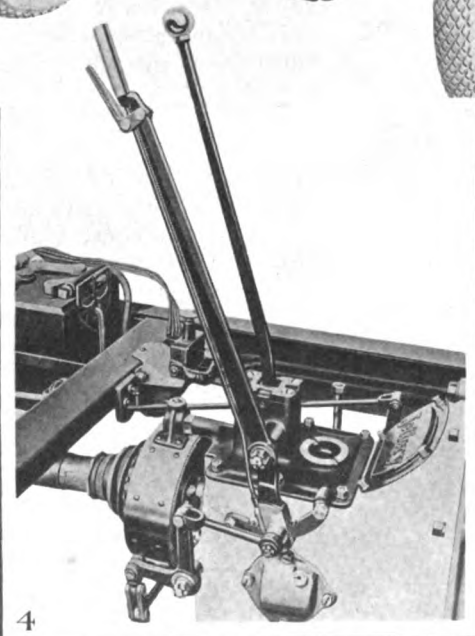
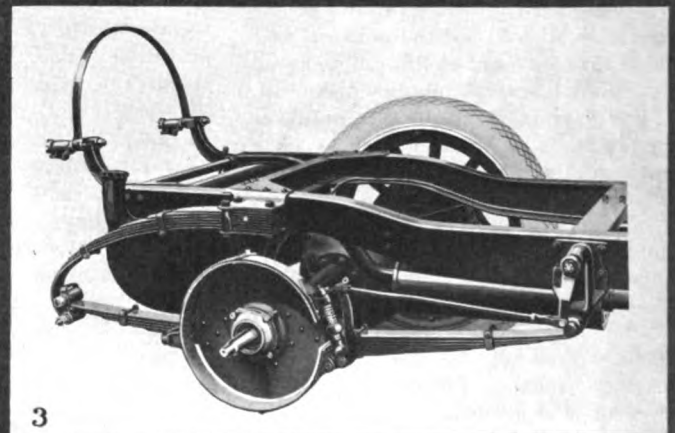
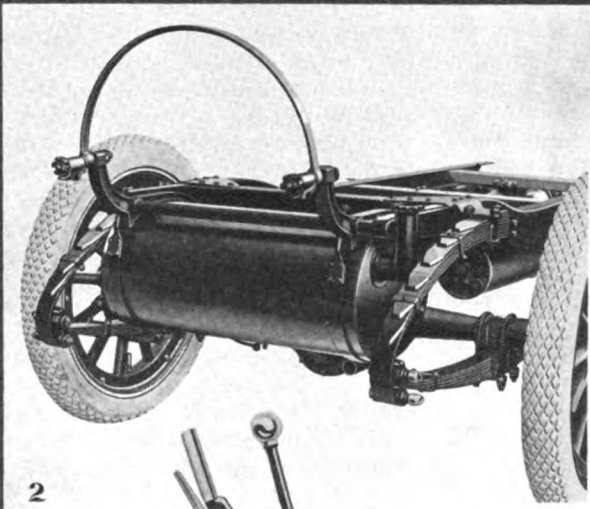
## Features of the New Jeffery Car

Working Parts of New Car Shown in Detail—Description on Opposite Page

- 1—Side view of the new Jeffery Six.
- 2—Large gasoline tank, 17½ gallons capacity, and tire rack on New Jeffery Six.
- 3—Showing the extra size, external contracting service brake on the new Jeffery Six; also the long flat under-slung rear springs.
- 4—The emergency brake is placed directly on the propellers shaft, stopping the car quicker and with greater dependability.



- 5—The motor—Jeffery built—clean, simple, strong.
- 6—The new Jeffery Six's over-size inherently balanced crankshaft, responsible for the lack of vibration at all speeds.
- 7—The chassis of the new Jeffery Six—simplicity is its main feature.
- 8—Showing the strong, deep side frame of the new Jeffery Six.



# The New Jeffery Six Announced

**Free From Vibration—Car Embodies Many Refinements—Low Hammock-Swung Body a Prime Feature—Much Improved, Yet Price Reduced—Note the Detail of the Principal Working Parts—Jeffery Plant Under New Nash Management the Acme of Efficiency—Illustrations on Opposite Page**

Proclaiming it a car without vibration at any speed, the Nash Motors Company of Kenosha, Wis., manufacturers of Jeffery cars and trucks, have just announced a new six-cylinder model. The new Jeffery is the embodiment of many refinements, both in its mechanical makeup and in its design.

Despite the rising cost of materials, and in face of the fact that most automobile manufacturers are boosting their prices, the new Jeffery Six is being offered at \$1,365, or \$85 less than the price asked for the old six. This is due both to the exhaustive resources of the Nash Motors Company and to the fact that 93 per cent of all the parts going into the new car are manufactured in the Nash factory.

Outside of its freedom from vibration, the dominating features of the new car are its long, low, hammock-swung body, and its graceful, sweeping lines.

The rear axle has been redesigned so as to permit under-slung springs. Thus the car has been considerably lowered without materially affecting its road clearance. This change has also lowered the line of vision  $7\frac{1}{2}$  inches, while the various revisions in body construction have made the car one that the passengers sit into instead of on.

## Big Crankshaft Stops Vibration

Experienced motorists say that the Jeffery engineers have achieved a notable triumph in the design of the new car's crankshaft, the real secret of its smooth performance.

The crankshaft is considerably oversized and inherently balanced, requiring no artificial attachments of any kind. Its large size eliminates all chance of contortion or twisting, and thus inhibits the slightest vibration. This is true, too, regardless of what

speed the motor is driven. Larger bearings insure extra long life.

Another important change is in the wheel-base. It has been lengthened to 125 inches—the lowness of the car making it look at least a foot longer. A pitch of 16 degrees has also been given to the windshield to make it conform with the symmetrical lines of the car as a whole, also adding much to the racy appearance of the new six.

The Jeffery designers have been unsparing in their efforts to obtain maximum riding comfort. The control levers have been lengthened so as to relieve the driver of any necessity of bending over, while the driver has been further benefited by making the seat he or she occupies a full inch wider than the other front seat.

## All Nice and Comfy

Both front seats are upholstered in bucket style. The rear seat, together with the auxiliary seats, also reflect the same amount of care. They have been designed to support correctly the backs of the passengers, thus insuring long trips with little or no fatigue. To ride in the new Jeffery, it is said, is like lolling in a big, soft library chair.

The motor, Jeffery built, develops 53 horsepower and is capable of driving the car smoothly and evenly at any speed up to 60 miles an hour. It is said to be economical on gasoline, while the oil consumption is given as 400 miles to the gallon. Equipped for the road the car weighs 3,190 pounds. Its shipping weight is 2,950 pounds.

One of the most striking advantages of the new car in a mechanical way is its new starting and lighting equipment. This, a two-unit Jeffery-Bijur system, represents the latest development in the automatic engagement type of starting apparatus. The lightest touch on the switch button starts the

motor, as easy as pressing your horn button.

Those who see the car invariably remark about the mechanical nicety with which the car's accessories are fitted into it. Take the tire pump, for instance. It is driven direct from the transmission, and it is so designed that there is no longer any need to remove the floor boards before it can be operated. All that is required is that the same wrench used on the demountable rims, or a plain, every-day screwdriver, be inserted through a slot in the floor. The air hose is always attached and ready for use under the driver's seat, and is equipped with a gauge to show pressure.

## Noise Completely Eliminated

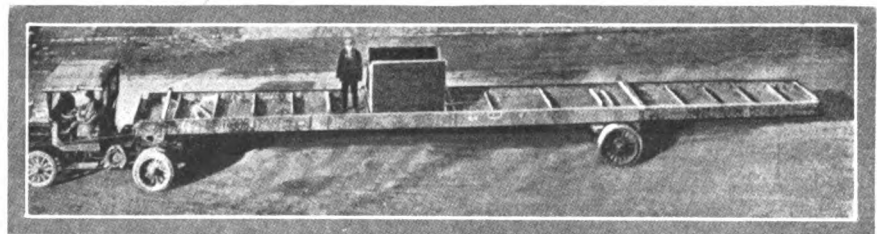
Another refinement is to be found in the use of the Morse silent chain in front of the motor instead of helical gears. This assures perfect quiet. As for durability: In a test a motor was run 50,000 miles on a block without the chain, sprocket, and other parts showing any perceptible wear.

"Really," said one of the Jeffery dealers, "the new Six is a dream. There isn't a flat surface anywhere on the body. Every piece of metal is curved both ways, not only strengthening the construction, but also facilitating the even distribution of paint. Also the paint sticks better on this kind of a job, thus assuring long life and lasting beauty.

"I tried her out the other day. From information I had beforehand from the factory I expected she would prove a wonderful car, but after trying her out myself I find her better than I had anticipated. She will throttle down to 2 miles an hour and climb right up to whatever you want to drive her at without reaching any period of vibration. I regard her as an engineering marvel."

## THE TRAILER TRUCKS HAUL LONG LOADS

The ability of a trailer truck to haul a load of large lengthwise dimensions is shown in the accompanying illustration, where a steel girder 60 feet in length, 57 inches wide and weighing  $15\frac{1}{2}$  tons is being hauled by an automobile. In this instance the load was hauled three miles in eighteen minutes. On the trip a quick stop had to be made to avoid a collision with a street car, and this was done, a com-



plete stop being obtained in a third of the length of the load, when the car and trailer were under a speed of ten miles an hour. It is stated that the

unusual length of the trailer and size and character of load attracted much attention from observers along the route.

# Garages and Garage Business in Central America

The Emerson Garage, a likeness of which appears herewith, is one of the best in the city of Guatemala, capital of the republic of Guatemala, Central America, and was established in 1909. It does a large livery business, making trips both in and out of the city. The building is equipped with all the modern appliances and a complete staff of machinists and chauffeurs are employed in connection with the business. A large stock of material and car parts is carried in connection with the repair shop, where the most skillful kind of repairing is done. A large stock of tires is also kept on hand, as well as a supply of gasoline and lubricating oils which are sold at wholesale and retail. The owner and manager is Mr. Max Nowakowski, who has had previous experience in large machine shops and automobile factories. He is a graduate of one of the best German technical schools and speaks Spanish, English and German. The garage is located on 4th avenue and E. 15th street.

The San Francisco Garage in the same city is said to be the largest and best equipped in Central America. It takes the name from the California city



**The San Francisco Garage**

because it is the birthplace of its proprietor, Alfredo E. Denby. Mr. Denby located in Guatemala eight years ago as plantation manager for the president of the Guatemalan Republic. He later became a government contractor and established the Denby Construction

Co. which built a number of wireless towers for the government. While he continues to supervise the activities of the construction company, he is now devoting all his time to the garage business. As will be noticed from the illustration, the garage is built on plans that are suited to hot weather countries. The San Francisco Garage does a large livery business, making trips into the country as well as around the city, rates being \$2.50 to \$3.00 per hour with chauffeur. The machine shop in connection with the garage is fully up-to-date and the stock of car parts, accessories, etc., is quite complete. Gasoline and lubricating oils are sold in both a wholesale and retail way.

In a conversation with Jule F. Brower, Guatemalan consul at Chicago, a representative of THE AMERICAN GARAGE was told that Guatemala is the most prosperous and progressing of all of the Central American countries. The government is stable, there having been no revolution or disturbance of a public character of any kind in that country within something like a quarter of a century. English is taught in the public schools and the good roads movement has obtained a footing and is gaining continuous headway.



**The Emerson Garage**

This is your journal. The advertisers help support it. As they grow in number the journal will grow proportionately in size and value. Write to these people for more detailed information about the things they promote. Tell them that you saw their announcements in a journal the character of which places them above suspicion.

## ACHT! THOSE FOOLISH QUESTIONS

In the middle of a small plowed field a motor car lay helplessly on its side. Evidently it had skidded off the road and through the hedge. The motorist stood looking at it disconsolately.

"Halloa!" called out a genial passer-by. "Had an accident?"

The motorist bit back the angry retort which rose to his lips and then replied coldly:

"Not at all, sir. I've just bought a new car, so I brought this one out into the field to bury it. Got a pickaxe and a shovel in your pocket you could lend me? I don't seem to be able to make much of a hole with a spanner."

# New Chicago Garage—Views of Architect

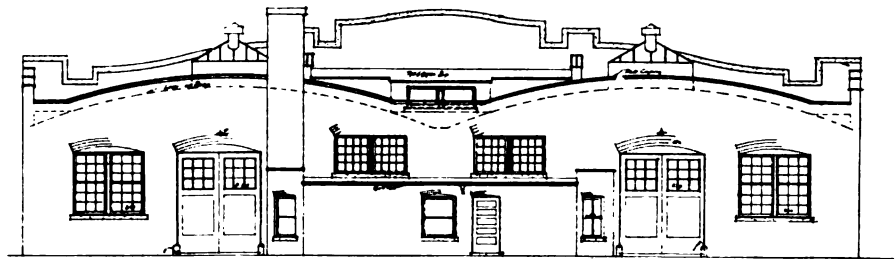
A modern, up-to-date garage, 100x117 feet, has been planned by Bishop & Co., Chicago architects, for G. H. Johnson, to be erected on Halsted street, in the Englewood-Normal Park district of this city. The building material used will be brick, concrete and steel, and the structure will contain most of the modern equipment. The front will be of pressed brick with stone ornamentation. As will be seen by one of the accompanying illustrations, the building will present a very artistic appearance, there being moderately large show windows, two entrances, door and windows to the office, and windows for the stockroom above the office in the second floor. The rear elevation shows the roof line, which will consist of two arches. Steel pillars in the center will hold up the trestle. Work on the new building is expected to start soon.

## Garage Building Improving

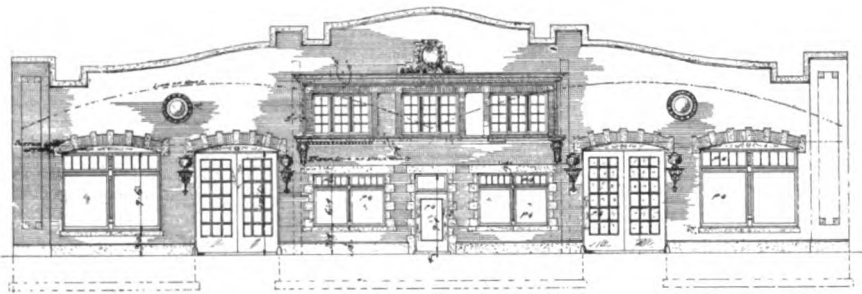
Mr. Bishop states that the character of garage buildings, not only in the cities but in the smaller towns, is steadily improving, and the demand for equipment that makes for better service and refinement is constant and growing. One of the most recent ad-

ditions to the modern garage is a vacuum cleaner system which enables the garage owner to keep the uphol-

stered parts of cars in perfect condition. Compressed air systems are also being installed with ventilators between

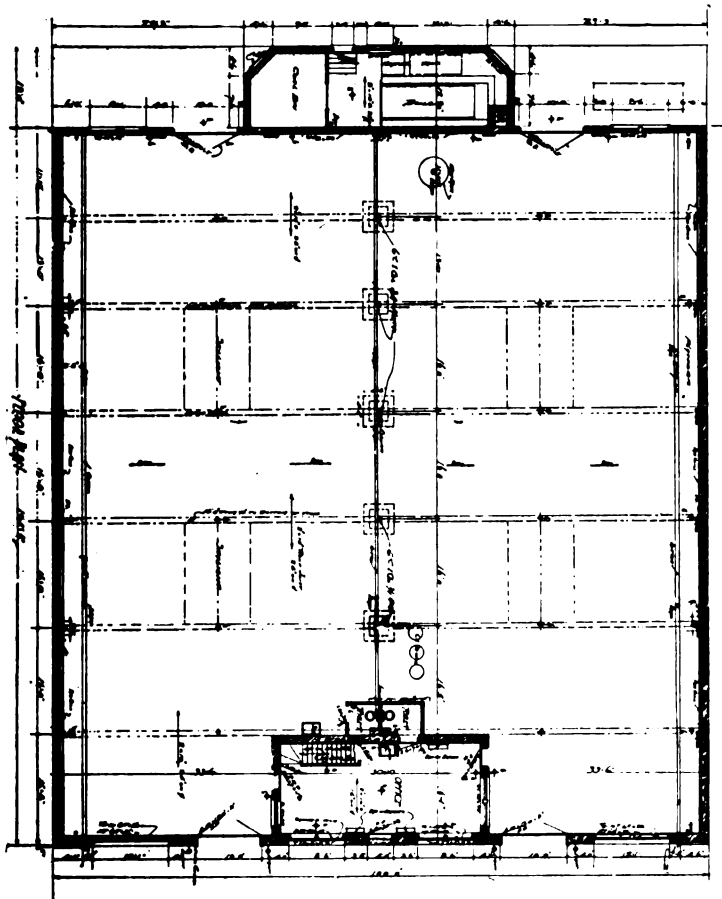


REAR ELEVATION



FRONT ELEVATION  
GARAGE FOR MR. G. H. JOHNSON  
HALSTED ST. CHICAGO

THE BISHOP ARCHITECTS  
35 JEFFERSON ST.  
CHICAGO



Ground Floor Plan

every two cars so that tires can be inflated without moving a car from its regular storing position. Compressed air is now being employed to open and close doors, an attachment being connected up with the same tank that is used for pumping tires.

It should also be noticed that better lighting systems are in demand. Instead of being content with overhead lights in the central part of the building, the garage is being wired for small lights between each two cars.

Some garages carrying large stock have installed the sprinkler system. While garage buildings are made largely of non-combustible material, the roof is always combustible, and the rate of insurance thus saved is worth while.

Under the building code of most of the cities, including Chicago, the boiler room in which is located the steam heating plant must be separate from the main building, with no connecting entrance, and all tanks for gasoline and other inflammable material must be outside of the building, and as these tanks cannot be placed on city property, vacant land must be left to accommodate them. The requirement usually is that these tanks be underground.

## Balconies for Stock

In most all one-story garages a stockroom is placed over the office

space and is connected to the office by stairs. Many garages, in addition to having showrooms with shelving, counters and showcases, have balconies on side or rear walks, or both, where shelving is placed or not, according to the requirements of the stock stored or displayed there.

One of the latest door opening devices is similar to the old contrivance used by farmers twenty-five years ago. The car is driven over a detached piece of flooring and the weight of the car opens the door; after it passes through the door another piece of detached flooring is driven over and the door is closed.

The pit is a common feature of the up-to-date garage. It enables the mechanic or washer to go under the car in an upright, or nearly so, position.

One of the most recent regulations adopted by some cities deals with ventilators which must be placed on the side walls near the floor to carry off gases which have been generated by tinkering with the engine. This regulation has been adopted in the interest of the health of the workmen.

#### Will Answer Questions

Mr. Bishop is one of Chicago's most prominent architects, whose record and achievements during twenty-five years are familiar to the A. A. G. O. secretary-editor. He has kindly consented to answer questions which members of our organization would like to ask of him through national headquarters. His counsel will be very valuable at times and should be made generous use of.

The firm that does not advertise its goods to you does not feel under obligation to sell you what you order. Any substitute will do as well because he is not on record in print, as the advertiser is, to sell you the thing that was advertised. It pays to buy the advertised article. You always have a recourse if wrong goods are shipped you.

A few seconds more time taken to do your work carefully may prevent an accident.

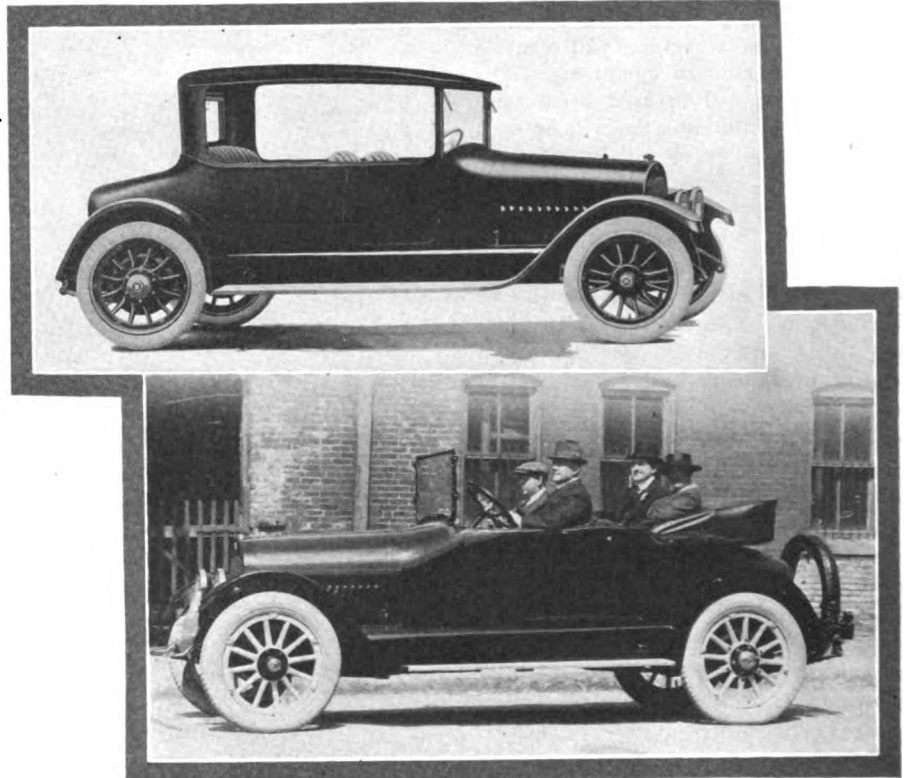


J. P. Kerth, Chicago Field Representative A. A. G. O., at the Left, and His Car Bearing Association Campaign Banner

## Cole Factory Busy—New All-Year Car

The last six months have been busy ones, indeed, for the Cole Motor Car Company of Indianapolis, manufacturers of the world-famous Cole Eight cars. Since A. F. Knobloch, a man of wide experience in the manufacturing

East, has been made eastern district sales manager. E. H. Baker, for many years president of the Cole Motor Car Company, of Buffalo, is the new central eastern sales manager. W. P. Dorrough, with headquarters in Atlanta, will act



Top—New 4-Passenger Cole-Springfield Town Coupe, \$2,195, F. O. B. Factory, Distinctive All-the-Year Round Car  
Bottom—Cole Eight Tuxedo Model No. 981

world, assumed charge of the Cole product a few months ago, the Cole production has more than doubled its figures in former years. This increased output has made necessary extensive changes in the company's sales organization, as well as large additions to the plant and its operating methods. The Cole factory in Indianapolis is today regarded as one of the model plants of its kind in the world.

#### Organization of Dealers Expanded

As the activity at the factory has increased there has been a marked expansion in the organization of dealers. New dealers have been added by the score in the North, South, East and West. Whereas the company could formerly handle much of its territory direct from the factory, a growing business has compelled it to appoint sales heads in the various districts, who will be in a better position to give closer and quicker attention to the army of Cole Eight owners the world over.

William L. Colt, of the Colt-Stratton Company, of New York, and one of the best-known automobile men in the

as southern sales manager, while J. E. Roberts will keep in active touch with Cole business throughout the West.

The increased demand for Cole Eights is simply due to the fact that the Cole Company is endeavoring to build its cars to suit the requirements of an exacting public and at the same time give the motor car purchasers the greatest possible value for their money, in the opinion of Mr. Knobloch.

#### No New Impractical Car

"We are not trying to force a new impractical car on the public," he said. "On the other hand, we are studying the wishes of the buyers as a whole. We find out what they most desire and we incorporate it in our product. For example—we began building a few weeks ago an all-year-round type of car, known as the Cole-Springfield Eight. We knew that the public would not be slow in taking up a costly touring car and limousine when it could get it in one model at one price. Since that car was put on the market its sales figures have been almost beyond belief. We can't get the bodies fast enough to supply the demand."



# Burton Process Litigation of Interest to All Gasoline Consumers

Motor car owners and garagemen, because of their interest in anything that helps hold down the price of gasoline, are keeping an eye on a suit filed August 7th against the Standard Oil Company of Indiana, contesting its exclusive right to use the new Burton process of distillation, which produces four times as much juice as was obtainable under the old method. The suit, which is brought by the Universal Oil Products Company of Chicago, would, if successful, revolutionize the petroleum oil refining business by enabling all the independent refiners to make use of the new process on the same basis as the Standard. This, it is conceded by all authorities on motor fuel, would make for a more free and unrestricted production and leave the market to answer more to the law of supply and demand.

## Infringement of Dubbs Patent?

The United States District Court of Kansas City will have to decide whether the Burton process, owned by the Standard of Indiana, is an infringement

of the Dubbs patents owned by the Universal Company. It is claimed that the Standard process is an infringement in all its essential features. Patent was issued to Jesse A. Dubbs of Los Angeles, a pioneer oil man and inventor of various processes now in use in refining, on January 5, 1915. This was after action had been taken by the patent office on the Burton application. The Dubbs application was filed, however, on November 20, 1909, whereas the Burton application for patent was not made until 1912. The Universal Company, therefore, which is reported to have the strongest sort of backing, is asking an injunction and accounting.

The importance to motorists and truck owners of throwing open to all refiners the use of this new process with its vast possibilities of fuel conservation—the Universal Company intends to license responsible independent refiners to use the Dubbs process—may be judged by the effect its recent introduction in Standard Oil refineries appears to have had on the price of

crude oil for making gasoline. In the twelve months following August 15, 1915, the price of motor fuel doubled. There was a tremendous demand for crude oil and all wells were working at capacity. But since the new Burton plants have got into full swing, so much more gasoline has been produced from a given amount of oil that the price of Mid-Continent has dropped from \$1.55 a barrel to 95 cents a barrel within a short time. Standard Oil, through the Prairie Oil and Gas Company, is also now declining to take more than 50 per cent of capacity of independent wells and will accept no oil at all from new wells. Yet, early this year Standard Oil of Indiana was said to be falling 20,000 barrels a month short of meeting the demand from automobile and truck owners. There has been some falling off in demand, it is conceded, but the new process has been the big factor.

## May Become an S. O. Monopoly

If the Universal Oil Products Company fails to make good its claims, the new method will become the monopoly of Standard Oil, and the independent refiners will be placed permanently at a disadvantage. It is pointed out in this connection as a significant fact that the price of gasoline—with Standard exclusively using the improved method—has not followed the price of crude oil down, except to a very limited extent.

The importance of this litigation, and of any agency helping to conserve crude fuel oil, will be realized by every garageman and car owner who recollects that this country produced 703,527 automobiles in 1915, and that the estimate for 1916 is 1,300,000 cars, giving us at the end of this year a total of 3,400,000 in operation.

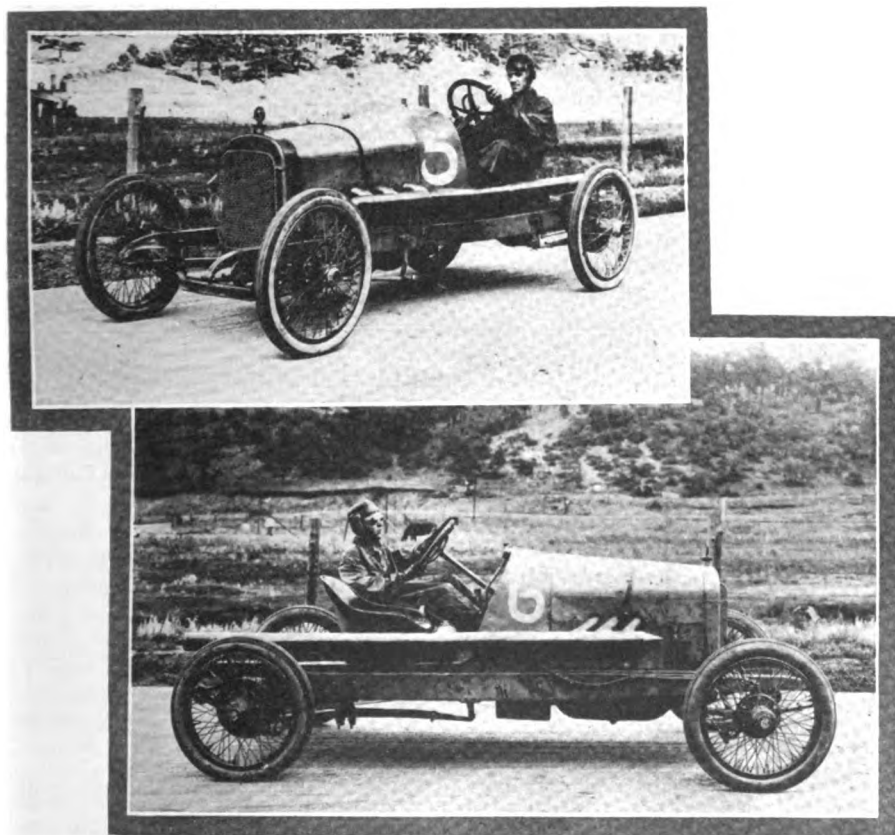
## ONE WAY TO SAVE TIRES

A clever garageman in Tennessee has discovered a way of saving tires that is worthy of consideration, through experimentation on his own and customers' cars. He found that by jacking up the cars and letting half of the air out of the tires, the life of the inner tube could be practically doubled.

He reasons that if rubber is stretched and made to stay stretched it cannot, and will not, in the very nature of things, last as long as a piece upon which the strain is relieved part of the time. He also finds that this sort of handling of tires also saves the casing.

When theory and demonstration endorse a practice which works out worth

## The Chalmers as a Racer



5—Roy S. Steents and His Chalmers, 3,400 E. F. M., Stripped Chassis, Second in Pike's Peak Hill Climb; Time, 23 Minutes, 29.9 Seconds.  
6—Fred H. Junk, 20-Year-Old Driver, Who Made His Debut by Winning the Pike's Peak Hill Climb, Class E., in Chalmers Six; Time for 12¼-Mile Climb, 23 Minutes, 4.6 Seconds.

while results in economy, it should not take long for the garage and motoring public to see the wisdom of adopting it.

### A HUSTLING GARAGEMAN

Richard F. Mokros is one of Milwaukee's leading garagemen and prominent in the work of garage organization in that city. He is secretary of the East Side Association and has been spoken of in highest terms by Na-



tional Organizer S. F. Chase, whose beneficent work in the "Cream City" continues to be affectionately spoken of by the fraternity there. Mr. Mokros is a progressive in his business affairs and enjoys the confidence and patronage of a large constituency of car owners and the public.

The Dann Products Company of Chicago will build a new \$100,000 plant in Cleveland to enlarge the output of their product, the Dann spring insert, for lubrication purposes.

The Alliance Tire Company of Alliance, Ohio, have increased their capital stock to \$500,000 and will double the size of their plant. The company's name will be changed to the Alliance Tire & Rubber Co.

Everybody BOOST. This is a good cause. Just what we want. Don't hammer, just boost. Good luck to you in this great fight.—S. Reese Machine and Tool Works, Plymouth, Pa.

It is sometimes difficult to bring a girl of the period to a stop.

When a sculptor makes a cast he fishes for fame.

## How Price-Cutting Gives Department Stores an Unfair Advantage

Hon. M. Clyde Kelly, of Pennsylvania, in House of Representatives, Washington, D. C.

Cutthroat competition never did and never will help the business of the average dealer.

I will admit that this may not hold good as regards mail-order houses, department stores, and so forth, because their interests seem to lie in the direction of putting the little merchant out of business and taking his trade. I am not anxious to help them do that and I am willing to let them take care of themselves, and without doubt they are perfectly able to do it. I take my stand on the side of the little corner store against the great combinations that threaten to wipe it out of existence. I stand with Littlefellow & Co. against the Soak-em-good mail-order houses. I consider the neighborhood store a necessity and I want it to have a fair chance.

Under fair conditions the small retailer can compete with and outdistance the big mail-order houses. He can not do it on cut prices on standard goods, for the big establishments can lose money on a few articles and make it up on others in their large and varied stocks. They make it up, rest assured of that, for it costs them far more to do business than the little dealer, and the large dividends paid by the great mail-order houses show how profitable their dealings are in the aggregate.

It has been proven by sworn testimony that the big mail-order houses and department stores do business at a much greater cost than the small retailer. *They have higher expenses and must make*

*greater margins on goods sold.* It follows that they cannot afford to cut the cost of any article, and if they do, they are compelled to make more than a fair profit on other goods sold. They use certain standard articles as "pullers-in" in order to tempt the people to buy unfamiliar and unnamed goods at unjust prices.

Prof. Neystrom, of the chair of economics in the University of Wisconsin, before the Judiciary Committee of the House on March 19, 1914, showed that *the average cost of doing business to the small retailer is between 15 and 18 per cent; to the large mail-order houses it is from 27 to 30 per cent; and to large department stores 30 per cent and more.*

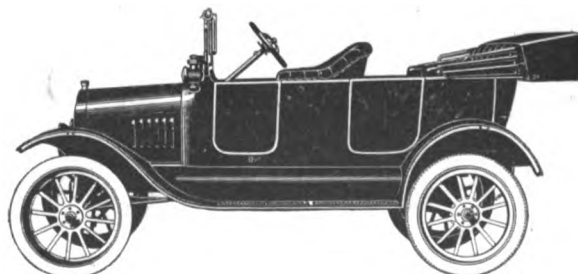
These immense establishments must make a greater average profit than the small retailer, but they are able to destroy the market for the small dealer on every standard, trade-marked article on which they cut prices.

The history of the United Cigar Stores shows the effect of price cutting. In 1912, 1,252 cigar manufacturers went out of business, and in 1913, 716 cigar manufacturers went to the wall. All over the country, in every town and city invaded by these stores, the retail tobacco dealer was ruined. In New York City 90 per cent of the retail dealers have been forced out of business by this combination. The small dealer must handle standard brands in order to satisfy his customers, but he can not afford to cut them below cost as do the United Cigar Stores. He can not carry the large stock of unknown brands on which to recoup his losses.

## The New Ford Models

Public interest in the new Ford models may be illustrated by the fact that when the first car was placed on

Wherein this model differs from the models of other years is in the larger sized radiator with enclosed fan and



display in a Michigan avenue show room in Chicago, the pressure of the crowd gathered there to see it broke the plate glass window. As shown in the illustration, the new Ford is very much improved in appearance.

stream line hood, crown fenders, both front and rear.

The roadster and town car also show an improved appearance, and the latter an increase in length of several inches. The lower prices prove very attractive.

# Cuban Garageman Americanizes Business

**Representative of American Garage and Auto Dealer Interviews Havana's Most Prominent Garageman and Dealer—Big Future for Trade in Cuba—Charges for Repairs Stable—Good Roads in Cuba**

Cuba is rapidly becoming Americanized and the war in Europe is a factor in the acceleration of the movement in that direction. Not that Cuba will ever become less Cuban in the distinctive features of its culture and commerce, but the friendly feeling that has existed between Cubans and Americans since the American government aided Cuba in throwing off the oppressive Spanish yoke received its mightiest impetus when the economic pressure extended by the European war drove Cuban importers to form American connections they would have delayed in forming and to stock goods which they would have left alone for a while longer.

An instance of this sort is found in the automobile trade. The supply of European cars having been shut off by the war, the American car became a necessity, else the garagemen and auto dealers would have been compelled to retire from the business of selling cars, which thought he, of course, could not entertain for a single moment. Then again, he had long contemplated making a change of base in this respect, but deep-rooted custom and the apparent inclination of buyers to take cars made in Europe, particularly in France, instead of cars made in the United States, had caused him to hesi-



tate and procrastinate. In spite of this, there are, at the present time, 2,600 Ford cars in use in the city of Havana out of a total of about 7,600 cars.

Among the first to note the trend of the automobile and accessories trade

Americanward was Mr. A. Gomez, of Gomez & Martinez, Ltd., Havana, who was a Chicago visitor within the past month and during his visit has familiarized himself in a first-hand way with the important facts and developments of the motor car industry of this country for the purpose of better serving his own large and growing constituency.

The Havana house of Gomez & Martinez is associated with the house of Zaldo Martinez, 66-70 Beaver street, New York, and conducts one of the largest and most prosperous garages and auto accessory stores in the Cuban capital, located at 49-53 Galiano street. The buildings occupied are three in number, 49x51 feet, and everything from the smallest bolt or device to a complete pleasure car or truck is carried in stock.

When Mr. Gomez was asked about the help situation he stated that it was most satisfactory. "Good mechanics can always be obtained, and we pay them from \$4.00 to 5.00 per day," said he. "They are native Cubans and some Italians. We have no price agreement among us covering repair charges, but make our prices such as to yield a 10 per cent net profit on our receipts. Our system of accounting is excellent and the trade in Havana know just what



they are doing when it comes to cost finding, overhead expenses and net profits. We issue time-and-cost tickets on each job of repair work, and when the customer pays the bill he pays for material, labor and a reasonable profit for the service rendered."

When asked about the storage of cars, our visitor stated that his firm did no tourist or transient storage business, owing to lack of room in their present quarters, but took care of a limited number of regular customers, the prices ranging from \$5 a month for Fords up to \$12 for the larger cars. His firm does an extensive livery business, making trips about the city and into the country.

Mr. Gomez believes in advertising and has ordered an electric flash and moving sign 18 meters long and costing \$2,500. He has gained much useful in-

formation while in the United States, besides enjoying his meeting with American business men very much. They have treated him, he said, with the utmost courtesy and showed a willingness to aid him in making his mission here attain the highest degree of success.

Consul Francisco P. Caballero, in whose company the AMERICAN GARAGE representative met Mr. Gomez, stated that he was greatly pleased with the increased importation of American cars and supplies into Cuba, and stated that the field there warranted every attention the American manufacturers felt disposed to give it. "You may not know it," he said, "but Cuba is as enthusiastic over good roads as the U. S. A., and her highways, as a whole are as good, if not a trifle better, than those of the United States."

position to actually ship cars. Today many long established manufacturers might well envy the volume of business the Liberty is turning out daily.

#### An Ideal Factory Arrangement

A journey through the Liberty plants reveals a particularly well thought out production plan carried out in an ideal factory arrangement by a smoothly running organization, working as a single unit. Progressive assembly, following a slightly modified chain system, is used. A moderately inclined track has been built down the center of the largest of the Liberty group of buildings. This track is approximately 275 feet long and at the starting point is elevated about a foot and a half above the floor, inclining to floor level at the opposite end. This works out very advantageously, for at all points along the line the men work standing at normal height without the necessity for platforms or falsework. The line accommodates about thirty cars at a time.

The Liberty Company is rivalling some of the higher priced productions in point of detail and finish and the work is never rushed. Due to the in-

## Interesting Story of the New Liberty Car

Sales of the new Liberty Six are approaching the \$5,000,000 mark. Distributors have been established in most of the principal distributing points throughout the country, and the manufacturing department is being hard put to keep pace with Percy Owen's sales division.

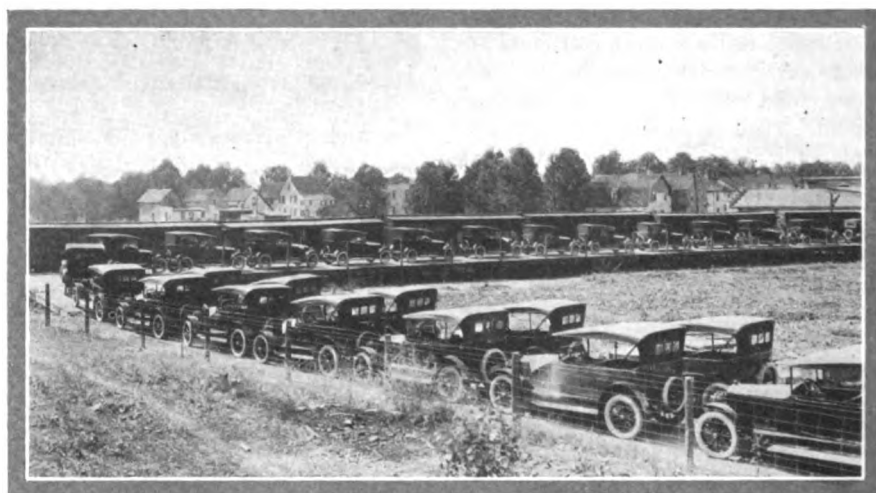
That James F. Bourquin, who has charge of the manufacturing end of the Liberty business and is also vice-president, has succeeded, can be readily seen by a glance at the accompanying photograph. But two or three months ago the Liberty factory buildings were practically bare. Today they are a-hum with activity.

On the long assembly line the string of cars moves in a never-ending procession, mounting the shipping platform in a steady out-go. Carload shipments are being made daily ticketed to all points of the compass—New York, Rochester, Buffalo, Baltimore, Columbus, Toledo, New Orleans, Birmingham, Alabama, Chicago, Sioux City, Iowa, San Francisco, Los Angeles, and Detroit receiving the bulk of the shipments. The rapid strides of the Liberty Company, due to the energetic movements of the Owen, Bourquin, Wirth and Cole combination are unprecedented in automobile history.

#### Six Months Ago and Now

But six months ago, immediately following the Chicago Show, the Liberty Company, was organized and by remarkably fast work the first Liberty car was on the road in April. Those who have watched the development of motor car companies during the past will appreciate just what the men back of the Liberty have accomplished. With the development of the car itself,

equal progress was being made in providing suitable manufacturing facilities. With the organization of the company the plant formerly occupied by the R.



A Day's Shipment of Liberty Cars.

C. H. Corporation was taken over and completely remodeled to conform to the high ideals of Liberty officials. New buildings were constructed on the site and old ones re-arranged. Cement floors were laid throughout the various buildings and yards, and equipment installed to care for fast progressive assembly with the greatest efficiency.

By July 4th everything was ready—materials had been purchased and delivered, equipment completely installed and the factory was actually producing cars according to the prearranged schedule. The company's sales progress and their present volume of production are still more remarkable when considered in the light of the fact that a general announcement of the car was not made until the factory was in a

cline the cars move forward easily with a touch after each operation is completed. Materials are received and stored on each side and reach the line with minimum handling. Paralleling the main building and separated by a spacious passageway are a series of connected buildings.

Beginning at the opposite end from the start of the inclined track the frames are started on their journey through the frame and spring assemblies to the chassis paint. Simultaneously in another building of the series, further along the Liberty unit, power plants are being assembled and prepared for the block test, which each motor undergoes. Thus, beginning at one end, a swing in a complete circle is accomplished and when discharged

from the main line the completed cars are road-tested and then driven but 100 feet to the loading platform. The efficiency displayed in the Liberty production is but an example of the carefully laid plans which have been followed in every stage of the Liberty Company's progress.

#### Percy Owen, the Organizer

It will be recalled that the Liberty Company was organized by Percy Owen, who is its president and general manager. By virtue of this fact, the company begins its career with a backing of sixteen years' automobile experience. While the organization itself is new, the car represents long-tried and thoroughly sound ideas, so that it might be said that the Liberty is a new car that is actually time-tried. All of the men in the Liberty organization are experienced automobile men and they have supplemented their combined experience with that of the manufacturers of such units as Continental motors, Timken axles, Delco electrical equipment and others equally well known.

The rapid progress of the company is due in no small measure to the fact that the men back of it are producers, not promoters, and they have not worked under the handicap confronting most new motor manufacturers.

Mr. Owen was manager of the New York Winton house in the days when Winton cylinders were horizontal; after some little experience as an importer he became manager of eastern territory for the Chalmers Motor Company and in 1912 was made sales manager of the company at Detroit. In 1915 he was made a director and a few weeks later general sales manager. He resigned to become vice-president and general sales manager of the Saxon Motor Company and severed his connection with that concern to devote his time to the Liberty enterprise.

James F. Bourquin, who formerly was general manager of the Paige-Detroit Motor Car Company, Detroit, and before that was superintendent of manufacturing of the Chalmers Motor Company, is the vice-president of the Liberty Company.

#### EXPERT PISTON RING ADVICE

Piston ring problems are solved and piston ring advice and service are given free by Messrs. Larson and Hilker, 19 S. La Salle street, Chicago. If you want a ring that maintains compression and builds a business that will stay with you, write this firm of experts for a plan of action. They are interested in your welfare, so do not be afraid to write them fully, as the plan they propose will benefit both you and them. Mention this journal.

### CHALMERS DEALERS CELEBRATE BIRTHDAY OF 3,400 R. P. M. MOTOR

Anniversary of Popular Car to Be Observed in Over 1,500 Cities and towns in Country; Reception to Public

A nation-wide birthday celebration, in which over 1,500 Chalmers distributors and dealers will act as hosts, is announced for September 30th by F. B. Willis, sales manager of the Chalmers Motor Company.

The occasion for the monster celebration is the first anniversary of the announcement of the 3,400 R. P. M. Chalmers Six-30. Just a year ago Chief Engineer Hinkley turned over the thoroughly tested model car to the Chalmers manufacturing department. Since that time 25,000 Chalmers Six-30's have been delivered and are now giving perfect satisfaction in the hands of owners. The Chalmers Six-30 has achieved the enviable record of 99.21 per cent perfect service in its year of life.

"We thought it fitting that our dealers should recognize in some way the first birthday of the most famous Chalmers car ever built," says Mr. Willis. "Our sales promotion department lit upon the scheme of a general reception at the establishments of all Chalmers dealers. On Saturday, September 30th, our salesrooms will be fittingly decorated and open house for Chalmers owners and the public will be the order of the day. Music, refreshments and other features of a regulation birthday party will feature the reception."

In addition to the reception, the visitors in the larger cities will have their first opportunity to inspect the latest Chalmers closed car models which have just been announced. The new closed cars, including the touring sedan, limousine, town car, and cabriolet, are all fitted to the standard 3,400 R. P. M. chassis and are rated among the smartest models making their appearance this fall. Lady Duff Gordon, the famous style authority of New York City, has designed the interiors for all Chalmers closed cars for the coming season. She has personally selected all hangings, upholstery and trimming for these cars and has guaranteed their exclusiveness among American built cars.

Gasoline is becoming so aristocratic that we expect to see the new crop of kings anointed with it. By no means is it the "oil of gladness," but rather of sadness.

Jeffrey Sixes have recently been equipped with Rayfield carburetors.

### HELPS FOR THE GARAGE MAN

The Adams & Elting Co., whose home office is in Chicago and branch offices in Toronto and New York, have found in Hy-pol, an auto body polish, they claim, a right hand man for the garage man and automobile owner.

Hy-pol is especially prepared to clean and polish automobile bodies, fenders, tops, leather cushions, etc., with the least labor and material. It contains no strong acids or other ingredients harmful to the finest varnished surface, and will not injure the hands of the user.

Hy-pol preserves leather and also acts as a water proofer, drying quickly, shedding water and eliminating the dust collecting feature. Hy-pol also leaves no greasy deposit.

Shin-ite is an A. & L. product that goes with Hy-pol. It keeps metal bright. It is especially prepared for the quick cleaning of automobile metal parts that have become tarnished or worn looking. It gives a brilliant "factory newness" with the use of very little Shin-ite and very little labor.

It is a perfect solvent for grease and dirt and quickly removes rust and corrosion, prevents tarnishing, is quick drying and also leaves no greasy deposit; and a very attractive feature is the point that should Shin-ite spill on the body of the car or any varnished surface, it will in no way injure it, which is not the case with most metal polishes.

### N. Y. HAYNES GETS IND. HAYNES

The stock of the Haynes Automobile Company of Indiana has been taken over by the Haynes Automobile Company of New York, a holding corporation, the consideration of \$4,500,000 going to the old stockholders who, in addition, receive half of the stock of the new company. It is planned to place a new car on the market which will be known as the Junior Haynes. Horace C. Stilwell of Anderson, Ind., engineered the deal.

### THE BEST HORN

The best hand auto horn for the money on the market is known as the Garford hand warning signal. It retails at \$3.85 and gives first-class service. Simple in construction and durable in the highest degree, it makes a rapid-fire seller for garagemen and dealers. If you haven't an agency and a horn that "sells like hot cakes," telegraph or write right away for the proposition of the Garford Mfg. Co., Dept. 509, Elyria, O. Tell them you saw it in the A. A. G. O. journal, and your request will be given special attention.



# UNIVERSAL BODIE

## Revolutionize Any Ford Car

### A Roomy, Comfortable Full Five Passenger Job with Four Doors

The UNIVERSAL Tourabout Body for Fords is designed primarily to bring the Ford car into the tailor-made standard and take it out of the machine-made class. You will agree that this has been accomplished. The only objection to the Ford car is its appearance. This we have remedied, at the same time increasing the efficiency and comfort to a very large extent.

The Radiator is built high to accommodate the stream lines—at the same time the cooling efficiency has been materially benefited with the larger area and water volume.

The Stewart-Warner Vacuum feed for the carburetor eliminates the old nuisance of getting out of the front seat to fill the gas tank. The weight at the rear gives the better traction and better spring action, with far more comfort. In fact, every little detail has been worked out so carefully that there is ample storage space under both front and rear seats, and the running boards are kept clean.

It is needless to mention the advantages of the One-Man Top; and in addition, we believe that the owner of one of these outfits will enjoy the snap and style and individuality combined in our top design.

The equipment which we supply is complete in every detail, as will be noticed by reviewing the specifications. Such extras, however, as speedometers, special steering wheels, wire wheels, etc., are not included, for the reason that many Ford owners already have some or all of this equipment.

The entire equipment weighs very little more than the regular Ford outfit, but due to a different distribution of weight and the quality of the upholstery, our body rides as easily and as well as most any car you may choose.

One of our first customers made the remark that this equipment was the first automobile layout that he had ever seen where the finished product looked better on the street than it did on paper. We believe that most anyone will agree with this statement.

## SPECIFICAT

### TOURING CAR

**Body:** 20 and 22 gauge steel, substantial wood frames; high-grade artificial leather; pillow backs with deep springs; liberal seat cushions; robe rail, foot rail, scuff plates, floor carpet, lock plates and knobs; rubber mat. **One-Man Top:** High-Grade Mohair; complete set of curtains and dust hood; patent Barre holders; top collapses very easily.

**Windshield:** Nickel plated hard rubber finish; double ventilating; clear vision type; heavy plate glass; tilted to latest approved angle.

**Radiator:** Special Universal; extra high for streamline; cellular type; large water capacity; black enamel finish; nickel finish \$5.00 extra.

**Hood:** Black enamel, "rain tite" hinges; six louvres; heavy gauge steel, with handles, etc.

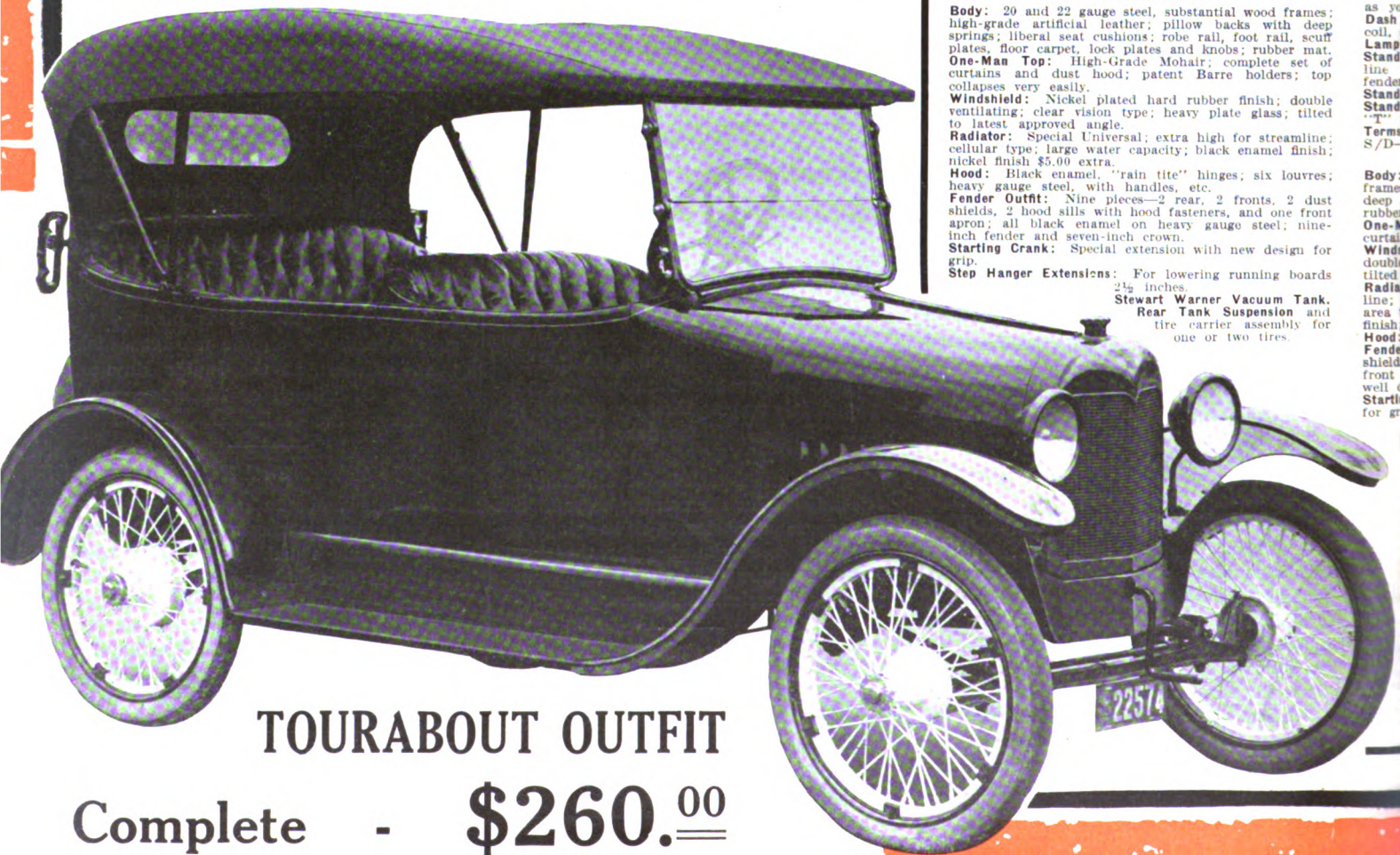
**Fender Outfit:** Nine pieces—2 rear, 2 fronts, 2 dust shields, 2 hood sills with hood fasteners, and one front apron; all black enamel on heavy gauge steel; nine-inch fender and seven-inch crown.

**Starting Crank:** Special extension with new design for grip.

**Step Hanger Extensions:** For lowering running boards 2½ inches.

**Stewart Warner Vacuum Tank.**  
Rear Tank Suspension and tire carrier assembly for one or two tires.

**Instrument**  
as you  
Dash  
coil, etc.  
**Lamp**  
Stand  
line  
fender  
Stand  
Stand  
"T" m  
Terms:  
S/D-1  
  
**Body:**  
frames;  
deep  
rubber  
**One-M**  
curtain  
**Windsh**  
double  
tilted  
**Radiat**  
line; c  
area th  
finish;  
**Hood:**  
shields,  
front a  
well de  
**Startin**  
for grip



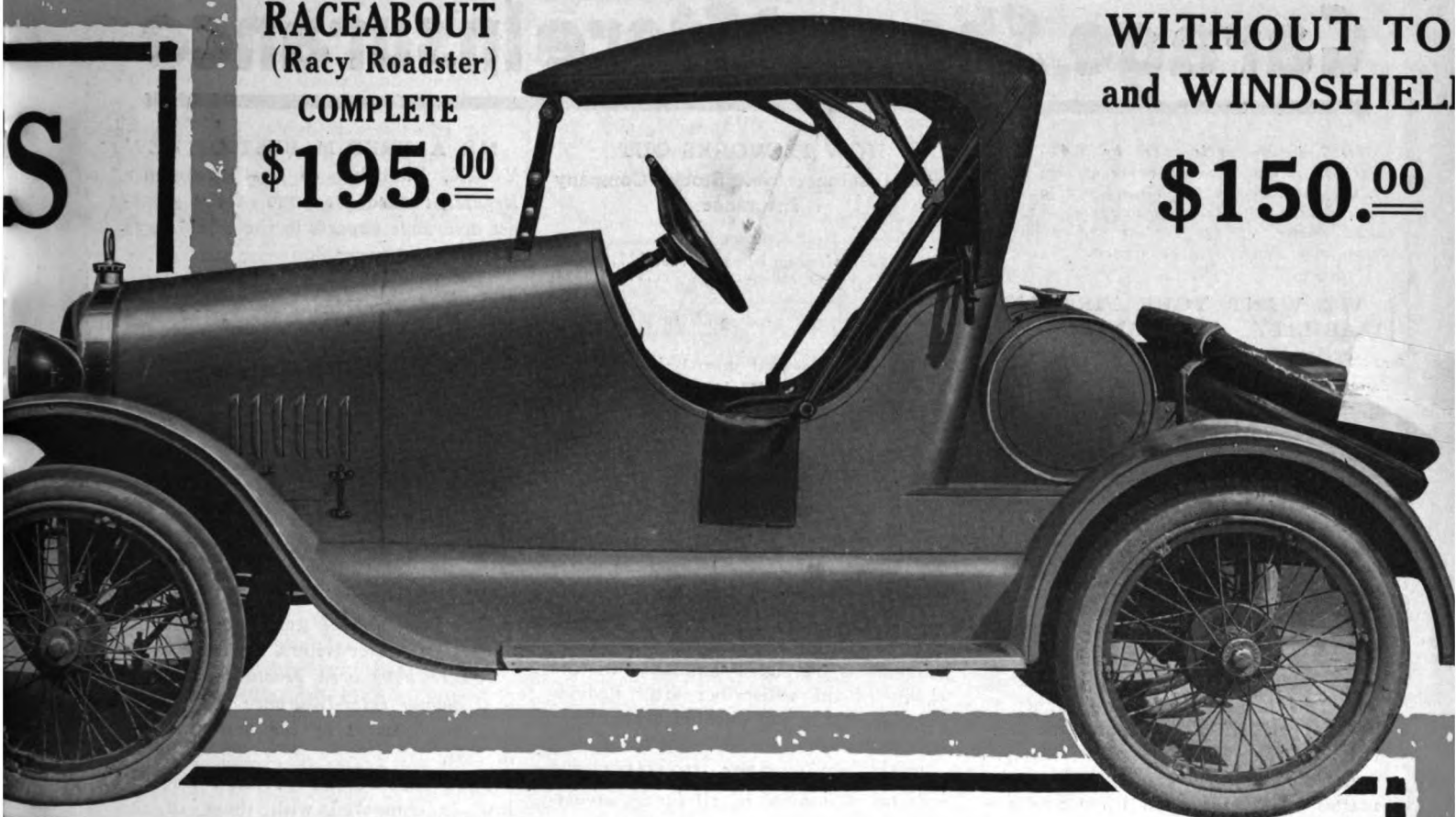
TOURABOUT OUTFIT

Complete - \$260.<sup>00</sup>



**RACEABOUT**  
(Racy Roadster)  
**COMPLETE**  
**\$195.<sup>00</sup>**

**WITHOUT TOP**  
and **WINDSHIELD**  
**\$150.<sup>00</sup>**



## ONS

Board in cowl allows as many instruments as you desire.  
Part of body structure; bored ready to receive Ford dash not used.  
Fenders: Raise lamps four inches.  
Color: Black and Dark Blue with gold body stripes; special colors \$10.00 net additional; hood and hood furnished in black only.  
Ford Running Boards are used.  
Ford Chassis of any left-hand drive model be used.  
Deposit of at least \$60.00 with order; balance or Express C. O. D.

### ROADSTER

and 22 gauge steel, substantial wood high-grade artificial leather; pillow backs with springs; seat cushions that ride well and wear; kick pad.  
Top: High-Grade Mohair; complete set of dust hood.  
Nickel plated and hard rubber finish; flaring; clear vision type; heavy plate glass; test approved angle.  
Special Universal; extra high for streamer type; large water capacity and more any other radiator for Fords; black enamel finish \$5.00 extra.  
Kick enamel, "rain tire" hinges.  
Hinges: Nine pieces—2 rear, 2 fronts, 2 dust hood sills with hood fasteners, and one all black enamel on heavy gauge steel; nine-inch fender and seven-inch crown.  
Tank: Special extension with new design

Hanger Extensions: For lowering running boards 2 1/2 inches.  
Line Tank: Twenty-six gallons capacity; with splash plates and of heavy gauge throughout.

Tire Carrier assembly for one or two

Instrument Board in cowl allows as many

as you desire.

Part of body structure bored ready to

coil, etc. Ford dash not used.

Extend: Raise lamps four inches,

to the appearance and giving better

light.

Standard Color: Cadillac Green with gold

body stripes; special colors \$10.00 net

additional; fender outfit and hood furnished

in black only.

Standard Ford Running Boards are used;

aluminum covered wooden aluminum bound

boards \$6.00 extra.

Standard Ford Chassis of any left-hand drive

model "T" may be used.

Deposit of at least \$60.00 with order;

balance S/D—B/L or Express C. O. D.

## A Practical Two Passenger Job, Unusual and Pleasing

The UNIVERSAL Raceabout, or Racy Roadster Body for Fords, is designed primarily to bring the Ford car into the class where individuality counts; for those who want the incomparable Ford chassis as the basis of a light two-passenger car; and for those who want a bit of dash and style.

The Radiator is built high to accommodate the stream lines—at the same time the cooling efficiency has been materially benefited with the larger area and water volume.

Each body is ironed for both top and windshield so that in case this equipment is required at a later date it is a simple matter to add them.

The equipment which we supply is complete in every detail, as will be noticed by reviewing the specifications. Such extras, however, as speedometers, special steering wheels, wire wheels, are not included, for the reason that many Ford owners already have some or all of this equipment. The rear deck offers a large number of uses. The space back of the tank is 40" x 20", which allows the application of all manner of trunks, sample cases, etc. Requirements vary to such a large extent in this regard that we have supplied the tire carrier in such a way that there is provision for the gratification of individual tastes.

The seat is divided and has two separate cushions. The general effect is that of the "bucket" seat, but very much more comfortable. High backs and easy cushions combine in producing the desired appearance and comfort.

The illustration shows a special steering wheel. Controls had been moved to the instrument board, but the regular Ford wheel and controls are usually used. No doors are necessary; the kick pad adds a touch both pleasing and practical.

One of our customers made the remark that this equipment was the first automobile layout that he had ever seen where the finished product looked better on the street than it did on paper. We believe that most anyone will agree with this statement.

Note:—The fenders shown are made special for our body outfit and will not fit the regular Ford body.

Dealers: Write or wire at once for our special dealers' proposition. Some good territory still open.

**GUARANTEE:** We guarantee all parts to be as represented; and that any good mechanic can make the installation in a reasonable length of time; parts returned for credit or replacement are to be sent to us transportation charges prepaid.

## Universal Car Equipment Co., Detroit, Michigan

# Garage, Shop and Store Insurance

THIS department is edited by MATTHEW WHITE, insurance commissioner of the A. A. G. O., who desires a free discussion of all subjects dealing with the insurance problems, fire and casualty, of our readers and members. Application blanks, etc., on request.

**WE WANT YOUR FIRE AND LIABILITY INSURANCE.** — Our Inter-Insurance Department is now busily engaged in getting up contracts and other necessary forms, ready to furnish to the members.

Our representatives are being schooled in inter-insurance, in order to qualify themselves to make an intelligent presentation of the whole proposition as applied to the Garage Owner and Auto Dealer.

**WE WANT** to bespeak for our representatives a fair and impartial hearing. They will not be as thoroughly informed on insurance at the outset as if they had worked at it all their lifetime, but we assure you that you will make no mistake in going into the matter very fully with them and understanding what is here and now being done for your benefit, and for the benefit of every member who uses care and caution in the operation of his business.

**WE WANT YOUR CONFIDENCE.** The officers of the American Association of Garage Owners have striven to give you a real *Insurance Service*, and it is up to you to take immediate advantage of it. We want you to feel that your interests are our interests, your success our success. In short, we want you to feel that in giving us power to transact your insurance business for you that your protection, your profit and welfare is our first consideration.

## WE ARE AT YOUR SERVICE

Just as you would go to your Lawyer on matters of legal importance or to your Physician for medical advice, you may entrust your Insurance Problems to us, with the knowledge and comfortable feeling that you have in the persons of your Insurance Attorneys experts who are keen to guard and are everlastingly guarding your interests. You can feel, also, that when you pay us an insurance premium that it is more like making a profitable investment than a payment on taxes, for the reason that you know you will receive back out of your premium paid to us a substantial saving each year.

## HOW IT WORKS OUT

### Inter-Insurance vs. Stock Company Insurance

#### Stock Company Rates

Where their premium is, say	\$200.00
They have to pay solicitor 17½%	35.00
They have to pay general agents 10%	20.00
Overhead expense at general agency office, 30%	60.00
Leaving a balance	\$95.00
This to pay losses, dividends on their stock. The balance goes to Reserve Account.	

#### Inter-Insurance Method

Your premium to us is the same as stock company	\$200.00
Acquisition cost and exchange's operating expense, limited to 25%	50.00
Leaving balance to subscriber's credit	\$150.00

Out of this balance is paid all losses, court costs, advisory committee expense and claim investigating expense. The balance is returned annually to the credit of the subscriber after providing for a safe net surplus account.

## THE ADVISORY COMMITTEE

will be in control of all funds, investments and disbursements, and it is composed of three members of the A. A. G. O., elected each year, and, ex officio, the attorney in fact.

The election of the Advisory Committee is provided for on the second Monday of December, each year: "The three subscribers at the exchange receiving the highest number of votes shall, together with the attorneys in fact, constitute the *Advisory Committee*." All moneys are to be paid out by check, signed by the attorney in fact and countersigned by one of the other members of the Advisory Committee.

**LET US BE CANDID.** It is not expected, nor promised, that during the first year of organization and promotional effort that there will be any great saving made—maybe none at all. It will not cost the member any more—this much is guaranteed. We must protect you at all hazards, and in order to do this we will have to reinsure your risks in stock companies of good standing on a pro rata contract until such time as we have a sufficient number of subscribers in the *American Garage and Auto Dealers Inter-Insurance Exchange* to carry the load.

You will have built the Exchange by your co-operation and will then come into the fullest benefits of its operation. "To earn, you must have the head; to spend, you must have the heart."

**MR. ALFRED M. BEST OF NEW YORK**, Publisher of *Best's Insurance Reports*, regarded as one of the greatest insurance experts in the world, says of *Inter-Insurance*:

"All insurance is fundamentally mutual in character, being an effort to distribute the economic loss through the action of the elements, through accident or through the death of individuals, among a large number of contributors to a fund designed to indemnify the comparatively small number who suffer loss."

"In passing, it may be said that Inter-Insurance offices which have been in active and successful business for many years have achieved their success in defiance of generally accepted beliefs of underwriters."

"There have been practically no failures among Inter-Insurance offices since the establishment of the first exchange in 1881."

"The expenses of operation are very low as compared with those of the stock insurance companies."

"This form of insurance, properly administered, provides absolutely secure indemnity, and the relations of those offices with their members differ necessarily from the relation of stock companies and their policyholders."

**HOW IS THAT?** Need you hesitate to give ear and co-operation to the A. A. G. O. *Inter-Insurance Exchange* and its representatives? If this is not enough for you to make us your Insurance Attorneys, and support this plan, "get this" from no less an authority than the Honorable L. A. Stebbins, General Counsel of the National Life Insurance Co. of America, who says:

"These exchanges furnish an entirely legal and tried method by which individuals, firms and corporations may carry their own insurance at cost; the business being transacted through an Attorney-in-fact, representing all the members of the Exchange. The Attorney-in-fact has wide discretionary powers as to matters of detail, but it is absolutely limited as to the maximum liability that may be placed upon any member of the Exchange. The members of the Exchange do not incur any partnership liability or incur any liability incidental to being a member of a co-partnership or stockholder in a corporation."

**WHAT ARE OUR LEGAL RIGHTS?** An eminent jurist has officially stated that:

"The right of a limited number of persons, firms and corporations, not dealing with the public generally, to contract reciprocally with themselves for indemnity against loss, is a right guaranteed by the Fourteenth Amendment to the Federal Constitution.

"It is also my opinion that these contracts of insurance are binding and enforceable according to their terms."

**THE ILLINOIS STATUTE UNDER WHICH WE OPERATE**, Act of June 14, 1912, Section 13½, provides as follows:

"Except as herein provided, no insurance business of the kind provided for in this Act shall be transacted by any other than a legally incorporated company, authorized to do such business under the laws of Illinois, or by such corporation of other states as are authorized to do such business in this State; Provided, however, that the Insurance Superintendent may authorize individuals, firms and corporations, by themselves or their attorney-in-fact, to provide among themselves insurance or indemnity to each other, of the kind provided for in this Act, through the medium of reciprocal or Inter-Insurance contracts, if, in his opinion, the plan proposed and the financial strength of the parties in interest will properly safeguard the interest of the insured."

#### DOES IT PAY?

*Central Garage*, 118 West Broadway, Frankfort, Ky., was damaged by fire and also several automobiles. The loss amounted to \$1,200, with no insurance on the stock.

*Home Auto Company*, Charter Oak, Ia., garage containing six automobiles as well as machinery and tools was destroyed; loss amounted to about \$6,500, with no insurance.

*Kressler Auto Company*, South Union street, Fostoria, Ohio, destroyed by fire to the amount of \$20,000, and only about half covered with insurance.

*Moon & Son*, A. S., Teylor, Neb. Their garage was entirely destroyed by fire; contents, valued at about \$3,000, were saved; loss amounted to over \$11,000, with \$3,950 insurance.

—*Automobile Trade Journal*.

When the Garage Owners and Auto Dealers are able to buy Fire and Liability Insurance at cost, as they are through the A. A. G. O., there will be no reasonable incentive for them to have their property, or that of others entrusted to their care, unprotected.

#### WHO IS WHO IN INTER-INSURANCE

Lest you be misinformed by your local insurance agent as to the true status of Inter-Insurance, we would suggest that you hear all he has to say derogatory to Inter-Insurance. Obviously, he has his reasons and they are not of your manufacture.

#### PAID IN FULL

I have received payment on my claim of \$23.25 against Mr. — in full today, thanks to the A. A. G. O. collection service.—W. D. Jaworski, Hi-way Garage, Marengo, Ill.

Quote him some of the names of large corporations and responsible individuals who are paying large premiums to Inter-Insurance or Reciprocal Exchanges and ask him "where he gets that stuff."

For instance, *Armour & Co.*, *Cudahy & Co.*, *Kellogg Switchboard and Supply Co.*, *Illinois Malleable Iron Co.*, *Haven & Giddes Co.*, *Arbuthnot, Stephenson & Co.*, *Samuel Cupples, Sherwin, Williams & Co.*, *Chicago Lumber & Coal Co.*, *W. R. Pickering Lumber Co.*, *Lock, Moore & Co.*, *Turtle Lake Lumber Co.*, *The Hess Spring & Axle Co.*, *Hanna Engineering Co.*, *Frank Van Camp, Judge & Dolph Drug Co.*, *Commonwealth Steel Co.*, *C. Niehe, Lumberman*.

There are thousands of America's foremost corporations and business men actively supporting the Inter-Insurance idea as Subscribers or Advisory Committee members.

#### INTERESTING INSURANCE FIGURES

The preliminary report of the insurance department of the State of Missouri gives the following figures from the January 1st statement of the Automobile Indemnity Exchange of Kansas City:

Assets .....	\$207,790
Premiums, 1915 .....	278,658
Total income .....	283,393
Liabilities .....	164,951
Losses paid .....	113,879
Total disbursements .....	237,911

The last statement of the Illinois Indemnity Exchange shows premiums received, \$581,012, and losses and loss expense of \$202,192.

#### INTER-INSURANCE BENEFITS

Stock insurance companies, actuated by selfish interests only, foster the passage of laws which seem to justify heavy increases in rates, even the broker and agent on whom you depend are chiefly interested in their commissions, and the higher the premium the higher their pay. Bear this in mind when arguments are advanced against inter-insurance.

A few benefits to be derived from insurance in our organization: The cost to you will be based on your experience, not on the experience on a hodgepodge of combustible buildings, packed

with highly inflammable goods, in congested districts, and with varying degrees of fire protection, nor in the casualty department will it be based on an experience involving rock blasting, tunneling, mining, steel construction, foundries, quarries, blast furnaces, etc. Whatever you do with the help and suggestions of the Association to lessen the possibility of fires and accidents will mean a saving to you—not increased dividends to Eastern and European stockholders.

#### A PRIME MOTIVE

The prime motive of this department is the safety and protection of our members at the lowest cost, not the heavy and increasing premiums "justified" by conflagrations, catastrophes and "adverse" legislation, with proportionate increases in commissions, home office cost, dividends and remittances to Europe.

#### AN IMPORTANT CASUALTY CASE

A case of considerable interest to garage owners is that of Frank Goodwin against the Joliet Motor Company, which is before the Circuit Court in Joliet. The Industrial Board of Illinois have awarded Goodwin compensation for the permanent loss of sight of one eye. The employer questions whether the diseased condition of the eye resulted from the accident, whether the loss of sight is permanent and also whether the employer is under the compensation act. The outcome of this case will indicate absolutely whether or not the garage owners were comprehended under the compensation act of Illinois.

#### NEW RUNNING GEAR ALIGNER

The Mechanical Utility Corp., 5 North La Salle street, Chicago, say they have something entirely new in the form of a running gear aligner. They describe it as an instrument of precision which tells instantly whether front wheels are in proper alignment. Of course, all garagemen and some car owners know that correct alignment is necessary to avoid excessive wear on tires.

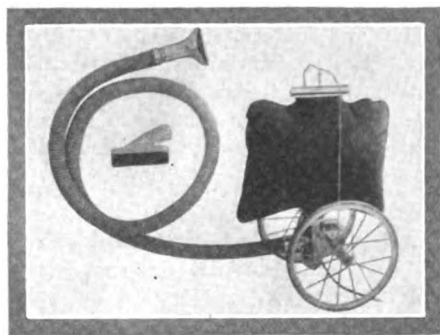
We could describe the instrument in detail and with illustrations, but these few words tell our readers what this concern has to offer for a small price, and we are advised that if you will send a postal card or letter request for full particulars and prices, mentioning the A. A. G. O., they will gladly send same to you.

# Auto Accessories and Garage Equipment

## THE STERLING UTILITY CLEANER

Attempts have been made during the last three years to place on the market a portable device that would clean automobiles, but either they did not have sufficient suction or else were not designed along the lines of convenience.

The Sterling, it is said, has as much suction as some small stationary plants, the diameter of the hose is one and one-half inches, and the machine costs,



to user, but \$29.50. The Sterling is said to be a marvel of power and convenience; in fact, it is in a class by itself, for it runs around the floor and obeys the slightest turn of the wrist in any direction without tipping over. Instead of hauling around 25 to 30 feet of heavy hose over the floor, one holds eight feet, the lower end of which rests on the machine, so that the weight on the hand is scarcely noticeable.

Besides being a powerful suction machine, the little machine can be converted into a portable blower in thirty seconds by simply removing the bag and inserting the hose in its place.

The Sterling will not only clean the automobile, but it can also be used in the house for cleaning upholstered furniture, book shelves, cupboards, crevices in wood, pianos, organs, billiard tables, etc., etc. In the store or warehouse it performs equally valuable services, for almost all dealers know what the words "shop soiled" means. The machine can also be used for cleaning switchboards in telephone exchanges.

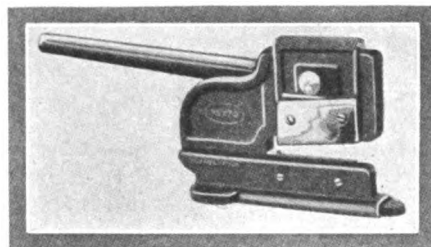
Principal points of the Sterling Utility Cleaner: Runs on two wheels, balancing itself; very powerful suction; one and one-half inch hose; convertible blower; cast aluminum fan; compact; neat appearance; weight, complete, 15 pounds. Outfit consists of machine, twenty feet of flexible cord, eight feet of hose for suction and blowing, spe-

cially designed toothed nozzle, and brush for cushions, etc. Fitted with oilless wood bearings.

The Sterling Sales Company, 343 South Dearborn street, Chicago, are directing the sales.

## A SIMPLE AUTOMOBILE BRAKE LINING CUTTER

This machine is only eight inches long and weighs but 17 pounds, yet it is a giant in strength when it comes to cutting its way through a piece of automobile brake lining, superseding the tinner's heavy shears or the regulation hatchet. It cuts brake lining three-eighths inches thick at one stroke and



does it with ease. It has an eccentric knife of special design and construction which makes the incision. Other material than metal, such as leather, canvas, special belting, etc., that is difficult to cut by other means, can be handled with perfect ease with that machine.

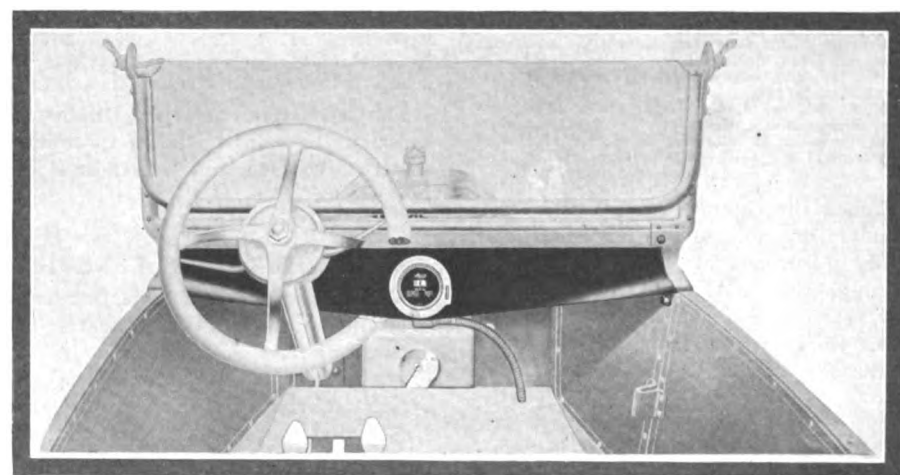
appearance of the car, besides making it possible to install the speedometer in a much more convenient position from where the figures can be easily read. It is so cleverly designed that anyone can quickly install it. It is only necessary to remove the nuts from four screws which are already in the dash of the car, fit the board in place, replacing the four nuts, and the job is complete.

The device is made of metal and finished in bright black enamel. The speedometer furnished with this cowl board is fitted with a nicked flange which holds the instrument in place. This nicked flange gives a very rich finish to the cowl board, which retails at \$11.25.

## AN AUTOMATIC WINDSHIELD WIPER

With the new mechanism invented by Will Tesnow, Chicago, Ill., it is only necessary to push a foot pedal to operate a device which will automatically clean the windshield. The motive power for operating the cleaner comes from gearing attached to the drive shaft and operating a flexible shaft. This flexible shaft in turn drives a worm gear which is meshed into another worm on the end of a shaft which extends in a housing over the top of the windshield.

This shaft is spiral cut with grooves to carry the wiper back and forth. By pressing a pedal, thus engaging the



## STEWART COWL BOARD FOR FORD CARS

The picture above shows the new Stewart cowl board for Ford cars.

This new cowl board enhances the

gears on the drive shaft, the wiper will travel back and forth across the windshield until the pedal is again released.

The equipment, complete, will sell at \$10.



### A HARMLESS CHARGING METHOD FOR STORAGE BATTERIES

One of the most important parts of a gasoline motor car or boat and one that seldom receives a thought except when it is at fault, is the storage battery supplying energy for starting, lighting and ignition. A little care goes a long way and the fundamental requirements are distilled water, in the proper quantity and sufficient charging to compensate for the demands upon the battery.



Long trips help to keep the battery in condition. City driving with the many demands for starting, for the horn and sometimes for lights, all tend to exhaust the battery and the low speed operation demanded by congested traffic that holds the motor below the speed at which it charges, gives the battery no chance to recharge. These conditions shorten its life if they occur frequently or for long periods.

Therefore, a supplementary method of charging must be used occasionally if the battery is to do its best. The necessary characteristics of such a system are simplicity, efficiency, low first cost and cheap operation.

As the result of numerous experiments, the engineers of the General Electric Company have perfected an apparatus and method that fulfills these requirements in the form of the portable G-E Mercury Arc Rectifier, Type MS, Form K. This rectifier will deliver about 5 amperes at a maximum of 15 volts, direct current, when connected to an ordinary lamp socket. It is designed for charging one three-cell, one six-cell, or two three-cell batteries, or it can be connected to a single battery-cell and will charge it at the rate of approximately six amperes when connected to a 110-volt alternating current supply. This rectifier is made for 133, 60, 50, 40, 30, or 25-cycle, 110-volt alternating current circuits.

To appreciate the reasons for this apparatus and method, a brief description of the changes that take place in a storage battery during the processes of charging and discharging is helpful.

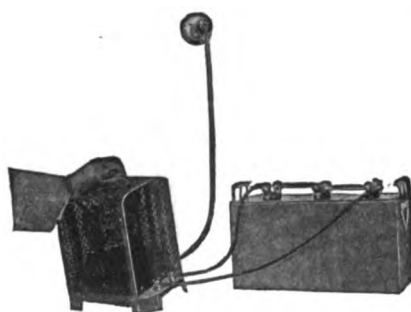
When charged the positive plate of a storage battery cell contains peroxide of lead and the negative plate is metallic lead in its spongy form, while the electrolyte or liquid is sulphuric acid at its highest specific gravity (1.280). If the battery is then discharged to the

normal limit, a large proportion of the peroxide of lead becomes lead sulphate through the action of the acid. The negative plate too now carries lead sulphate and the gravity of the acid drops to about 1.170 (practically water) with few of the original characteristics of the acid left. The acid loses its identity through creation of the lead sulphate.

When the battery reaches this stage it should be charged by the application of "direct" current properly adjusted as to voltage, for some hours depending on the amount of current drawn from it. In addition about every fifth or sixth recharge a so-called "scouring" or "soaking" charge at a low current rate should be put in to bring the electrolyte up to full specific gravity and to remove all traces of the sulphate, etc.

In the processes of recharging the lead sulphate on both plates is "broken up," to use the chemical phraseology, while the liquid resumes the characteristics and specific gravity of sulphuric acid. At the same time the voltage across the terminals rises with the gravity of the electrolyte.

No harm will result to a battery as



Starting the Rectifier

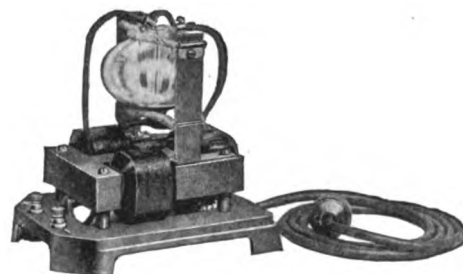
long as there is plenty of lead sulphate for the current going into it, to work upon, but the necessity for close regulation of the current arises when the lead sulphate has nearly all been returned to its original form. Then the current tends to "break" the water into its component parts, hydrogen and oxygen, which causes gas and heat. If continued it will ruin the battery.

This method of regulation has been devised to prevent such an occurrence.

The rectifier consists of a metal base on which are mounted the necessary reactance coils and rectifier tube in a suitable holder. The whole device is covered with a sheet metal cover. An attaching plug is supplied which may be inserted in any lamp socket. There are also two binding plugs distinctly marked plus (+) and minus (—) from which wires are run to the battery or batteries to be charged. The device weighs about 15 pounds and is easily moved. It is not necessary, therefore,

to remove the battery from the car to charge it.

Tipping the rectifier slightly after connecting the two terminals of the rectifier to the battery and the rectifier itself to a lamp socket will start it and no further attention is necessary until the battery is charged and the current

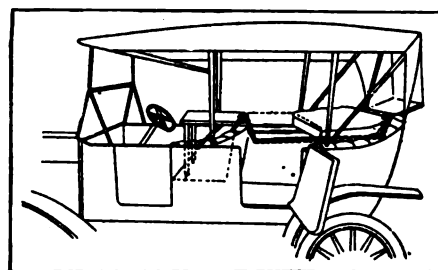


Rectifier With Cover Removed

shut off. Two batteries may be charged at the same time by connecting them in series, and connecting the rectifier to the extreme terminals of the batteries. In case the current is interrupted the batteries will not discharge back through the rectifier. At 10 cents the kilowatt-hour for a 10-hour charge, it will cost about 15 cents for charging any of the batteries above enumerated.

### AN AUTOMOBILE BED

A bed attachment for use in a touring car has been patented by J. J. Muther of San Diego, Cal. From the illustration it will be seen that an extension frame is used which rests on the seats' backs to furnish sleeping



quarters for tourists. The forward end is supported by legs which rest on the front seats. Cushions are placed on the frame and are used as a substitute for mattress.

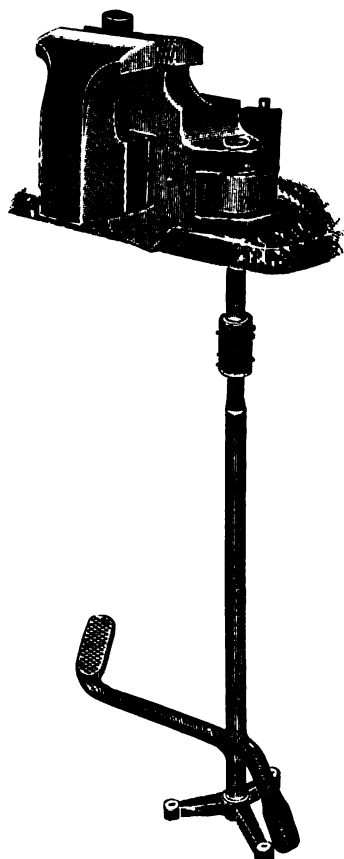
Ganschow means gears of the highest quality for automobiles. See page 51 for some noteworthy particulars.

George A. Ebert, proprietor of the Modern Garage, Brooklyn, N. Y.: "Our regular night's storage is \$1, but, of course, being a member of the association, would gladly make it 75 cents if it brought enough transient trade."

### A QUICK ACTION FOOT LEVER VISE FOR MACHINISTS

When a machinist has once used a quick action foot lever vise he will use no other. These vises may cost a trifle more than the ordinary sort, but the time saved will more than make up the extra cost.

The vise illustrated herewith enables the operator who handled the piece of material to be clamped with both hands, after which the foot pressure holds it in place. The vise part is a standard bench vise, and is equipped with a pedal



attachment which operates the vise jaw that takes hold of and clamps the work.

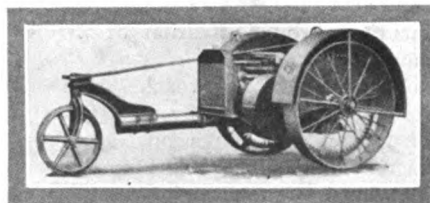
There are two arms to the pedal arrangement, the left one pushing forward to transmit the motion to the front jaw for gripping the work and the right one for removing the grip on the jaw. The foot pressure and pedal equipment leave both hands free to lift and insert work into the jaws, thus making it easy to handle heavy pieces that would otherwise be clumsily manipulated.

As the length of the standard can be changed to suit conditions, the vise can be fitted to any workman's bench.

### A SMALL TRACTOR

Power farming up to date has been largely a luxury enjoyed exclusively by the owners of large farms. Now automobile and tractor engineers are working on the problem of building a small tractor that will meet the require-

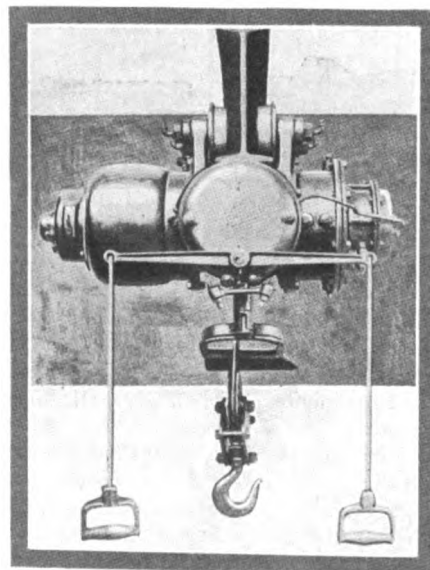
ments of the owners of small farms. We have here illustrated a light three-wheel tractor that will almost meet the requirements of even a small truck farm or garden. This little machine is built to do numerous kinds of work that a heavy machine could not do be-



cause of its inaccessibility to the ground to be treated. It is not claimed that the little machine will wholly take the place of a horse or mule, but rather that it will supplement animal work in a very economical and efficient manner, operating tractively as well as in a general utility power manner.

### A LIGHT ELECTRIC HOIST FOR THE GAGAGE

The small hoist shown in the accompanying illustration is operated by electric power and handles light loads in a most acceptable manner. Its construction is simple and its action quick and dependable. The electric brake has been so arranged as to automatically regulate the lowering of a load,



besides bringing the armature quickly to a stop when the current is turned off.

The brake is good sized and is set automatically to balance the load, causing the temperature not to be at any time excessive even when called upon to perform its combined function. The action just described should be differentiated from that of allowing the brake to set full power whenever the hoist operates in the lowering direction, as lowering is effected by the motor

pushing the car downward against the full power of the electric brake.

We understand that the hoist is being built in capacities of 500, 1,000 and 2,000 pounds and its special features are heat-treated steel gears, positive oil-bath lubrication, and combined supporting element and oil-tight enclosures.

### A LITTLE VULCANIZER WITH A QUICK ACTION

Inner tubes may be quickly repaired by a little vulcanizer suitable for small shops, and even for the car owner. Unlike most of the small affairs, it is reliable for the reason that the exact amount of heat required can be applied.

Bits of pasteboard disks are used for the heat units. They are burned in



the small pan and so timed as to produce the proper amount of heat for the required length of time. The pan is so positioned that the surface applied to the patch will not extend over the inner tube, but action will cover the patch and the patch can be so manipulated that a feather edge can be obtained, thus enabling the vulcanization to fasten the patch so that no seam will be visible. The heat does not reach the tube, but affects only the patch. Pure gum rubber is used in the operation.

The process of patching with the use of this simple device is more rapid than changing the tube, consequently it should be popular with car owners on tour and should make a quick-selling article for the garageman's accessory stock.

### PIKE'S PEAK BUSES MADE REGULAR PIKE'S PEAK TRIPS.

Fleets of White motor buses and touring cars, operating on the new \$250,000 double-tracked Pike's Peak auto boulevard from Cascade, Colo., to the summit of this mighty mountain, nearly three miles in the air, have carried more than 10,000 passengers up the mountain to the "roof-of-the-world" since the highway was officially opened to motorists on July 23.

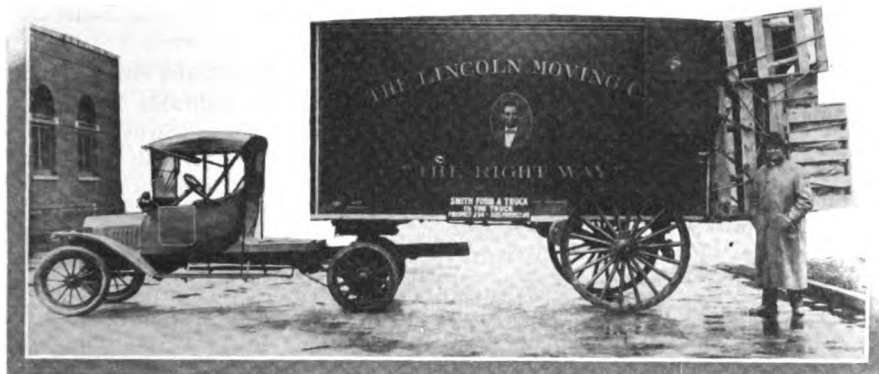
These buses were the backbone of the transportation facilities during the recent mountain climbing contests. Running in fleet formation most of the time, they made trip after trip from Colorado Springs to the Peak and to the intermediate observation points.

## New Smith Form-a-Truck Development

Recently several users of Smith Form-a-Trucks have developed a new feature that is meeting with great success and may interest our readers.

truck. Quite a marvelous performance.

Recently we have received reports from several who use attachments in this way, carrying from two to three



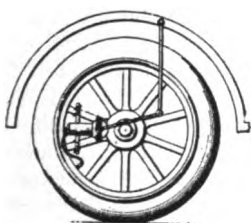
The accompanying photograph is of the heavy wagon body attached to the Form-a-Truck with a fifth wheel. This rig has pulled 7,100 pounds with ease. It demonstrates the marvelous pulling power of the Ford engine and transmission when attached to the sturdy

tons, and they all claim that the work is done most efficiently.

August 10 was the first birthday of the Smith Form-a-Truck. The factory has an output of over 300 attachments a day, and the year has been most successful.

### A NEW TIRE-INFLATING PUMP

There are a number of tire-inflating pumps on the market, but the one invented by A. P. Sheridan, Fall River, Mass., is deserving of special notice, as it is attached to the wheel and automatically supplies air to the tire



while the wheel is in motion. As seen in the illustration, the pump is attached to the spokes of the wheel and the shaft is revolved by arms or cranks attached to the fender of the car overhead. When sufficient air has been obtained, the driver is given warning, whereupon the pumping can be brought to a stop.

### RADIATOR EXPERTS

The Auto Radiator Mfg. Co., 764 W. Van Buren street, Chicago, are leaders when it comes to building and repairing radiators. Garagemen should deal directly with this reliable manufacturing house and save the middleman's profit. They are friends of the A. A. G. O., and by mentioning this journal extra special attention will be given to your requests for information.

### NEW TYPE ENSIGN CARBURETOR

The Ensign carburetor now has a new type of top control adjustment and henceforth the new model will be used as standard construction on all carburetors bearing the Ensign trademark.

C. L. Broderick, of the Imperial Garage, Oakland, Cal., said:

"There are two ideals in carburetor construction which the manufacturers of the Ensign have never lost sight of; they are efficiency and simplicity. From the very moment that it was put on the market more than three years ago the Ensign has made a reputation for itself on an efficiency basis.

"Due to the peculiar construction of the mixing chamber and the active principle upon which the Ensign carburetor operates, the results obtained with this carburetor have been eminently successful in every respect and for every duty imposed on it. Motor cars, trucks, aeroplanes, tractors and motor boats now are being equipped with the Ensign to get better working results.

"From time to time the manufacturers, after careful research and investigation, have simplified their construction without impairing their efficiency and this latest development—the top control adjustment—while an important feature of construction, does not hinder or lessen the high efficiency standard which Ensign carburetors have won for themselves.

"By means of this new adjustment control, instantly accessible, a more accurate, permanent adjustment can be made by any one, and this adjustment, once properly made, does not demand any further attention for variations in altitude or temperature. With this new type of control it will be possible for any one, even if not mechanically trained or inclined, to make the finest adjustments, and in this way they are bound to get more satisfaction than ever out of the Ensign."

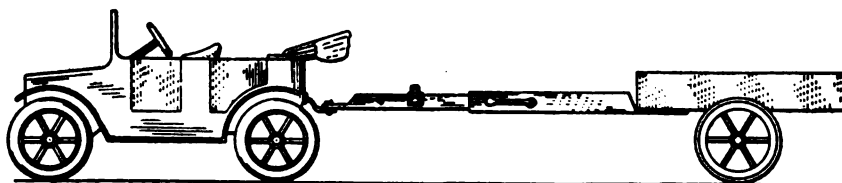
If you order an article by mail, or buy it in person, from one whose advertisement appears in your journal, let them know that you appreciate their helping you and that you are reading their advertisements. This helps us to secure more business and enables us to give you a better journal.

A painful silence is unknown to few men—but all women have sensed it.

## An Extension Trailer Coupling

This device is made in such a manner that the trailer will follow an automobile to which it is attached at a sufficient distance to enable the safe transportation of ladders and other long pieces of material. A cross-bar goes with the coupling and supports the forward

ends of the ladders or other material carried. When not in position the cross-bar can be swung to a longitudinal position. Milton C. Kirner of Cleveland, O., has the device covered by patents and will put the same on the market shortly.



Extension Coupling Used Between a Trailer and an Automobile to Carry Long Objects, the Coupling Being Provided with a Cross-Bar to Hold the Ends of Ladders.

# Mechanical and Engineering Problems

*THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by IRWIN D. GROAK, M. E., graduate of Budapest; patent attorney and consulting engineer for some of the largest engine and motor concerns in the United States. When shop information is desired, write Mr. Groak, care this office.*

## VALVE ADJUSTMENT

**Question.**—What clearance is necessary to keep between the tappet and valve rods? I generally keep enough space to put my knife between.

G. S. T.

**Answer.**—The clearance between the lift rod and the valve stem when the valve is closed should be .004 when the motor is cold. This is necessary on account of the expansion of the valve stem caused by the heat and the engine cannot work very well. The best is to take an old hek saw and grind it down, measure it up to a micrometer until it is .004 of an inch and have a gage this way.

## TO REMEDY SQUEAKS

**Question.**—I handle new cars and in most cases after the purchaser had his car for about a week or two he comes back because the car squeaks. We generally locate this and remedy it by putting a little oil and graphite between the leaves of the front spring. However, I had a very peculiar case the other day, where a car run about nineteen miles per hour when the fender began to shake and vibrated just as if the engine was loose in the car. It took some time to find out that this was caused by the fender. My mechanic said that it was necessary to rivet the bottom of the fender sheet, which is close to the engine head, and in this way with the fender sheet riveted to the chassis it would not vibrate.

I insisted, however, that this should not be done; simply separated the fender from the chassis, which I did with the help of a screw driver. I noticed on the other fender that there was more clearance and the vibration ceased. Now I wish you would advise me what causes these noises.

N. F. B.

**Answer.**—Noise is always caused by some vibration. Either one of the metal parts of the car is loose, or either two or three parts having connections with one another need oiling.

A noise on an automobile is a very important factor; it tells the experienced ear whether the car is in good condition, whether it is running right or whether something is wrong. You

know the old saying, "a stitch in time saves nine," and this is true with the automobile. The minute you hear a certain noise, immediately trace it and remedy same.

In your last case with the mud guards getting into vibration, when the engine runs at a rate of nineteen miles an hour whether the car is going or standing still is a peculiar outcome of what we call in science "Harmonizing Action," or "Sympathetic Vibration."

This only happens at a certain speed. If you go above or below this the vibration ceases, and it is quite important to remedy it, because it hurts the car. Such harmony action can make the entire car tremble.

Most of the squeaks in the car are traced to either loose mud guards or springs which need oiling. We have given advice time and again pointing out the necessity of looking after the springs and oiling them with a mixture of oil and graphite. Graphite, however, should not be used wherever there are machine working parts.

## CHECKING A CHRONIC AILMENT

We would like your engineer's opinion regarding a problem that has arisen in our repair department.

We have a 1914, Model 32, Marmon touring car that has just recently begun to heat excessively. This motor is water cooled (pump circulation). The radiator has been cleaned, the lines all cleaned, the pump throws a goodly quantity of water, circulation seems good. The motor is clean. We have made no change in oil (Polarine Med.), no change in gas; the lubrication seems good. The motor seems to have good power, yet it evaporates an entire radiator of water (2½ gallons) going four miles. We are averaging about the same mileage (eleven) as before the trouble. The draft of the car seems as light as ever. No brakes dragging. There seems to be no other symptoms, at least no others are apparent to us.

Can you from this give us an explanation that will aid us in checking this chronic ailment?

G. F. R.

Check the timing of the motor, because, if the motor is firing late, it will heat up the engine excessively in a very short time. Besides this, look at the exhaust, by putting a piece of cardboard against it, so as to see if there is any steam coming through it, which would show if there are any leaks in your cylinders; however, you will find the

trouble in timing that the engine is firing too late.

## Welding Questions Answered Welding Malleable Iron

**Question.**—I have owned an oxy-acetylene machine for half a year and for the most part am successful with it. Many of the machine parts I get are malleable iron, but I know of no way to determine whether they are malleable or cast iron; consequently have trouble with my welds. Will you tell me how to judge malleable iron and how best to weld it strong?—H. R., Okla.

**Answer.**—Malleable iron, as we understand it in this country, is originally a white, brittle cast iron, which by heat treatment and decarbonization becomes partially malleable. It is used in construction where the strength of cast steel or forgings is not essential, but where the brittleness of cast iron is to be avoided. We may therefore to a certain extent judge whether or not the casting is a malleable one by knowing its use, but at best this method is uncertain. Next is the file test, cast iron being ordinarily considerably softer than malleable, but this also is uncertain, since one may often run against a cast iron which has been chilled or made largely of scrap material and which would be very hard.

We can more surely tell by color. Malleable iron has two distinct colors and many times three, while cast iron has but one—gray. If a malleable casting, which is broken, is examined carefully, it will be noted that in the center it is white, while the outer section is black. Usually these zones of color are very distinct and between the white center and the black outer section the color will shade off, making three distinct color sections. This is not always the case, however, and, especially in thin castings, the black section is likely to penetrate quite close to the center. We can depend upon cast iron being gray, however, and malleable being black on the outer section, and possibly this black area will extend to the center or nearly to it.

The test which never fails, but which requires a little experience, is the flame of the oxy-acetylene torch. Cast iron under the flame simply melts. Malleable, on the other hand, has several peculiar characteristics, the most prominent being the tendency of the metal to draw away from the flame as the section the flame is played upon comes to the melting heat—the metal drops

slightly. This may be more readily understood by taking three metals—wrought iron or mild steel, cast iron and malleable—and playing the flame on a thin section of each in turn until it starts to melt. By watching the melting metal you will readily determine how each acts under the welding flame and never again will you be at a loss to determine definitely whether a casting is malleable or cast iron.

Malleable iron cannot be welded—not in the sense that we weld wrought iron or aluminum or cast iron. We prepare the casting in the same way that we do any other, but here we use a bronze rod instead of a malleable one for the filler material or “welding” rod. Personally I think Tobin bronze the best filling material, though many welders use manganese bronze. The one thing to be careful about in malleable iron welding is to not melt any part of the casting. When it reaches a bright red heat the bronze rod should be added, care being taken not to bring the cone of the welding flame into direct contact with the bronze.—Ex.

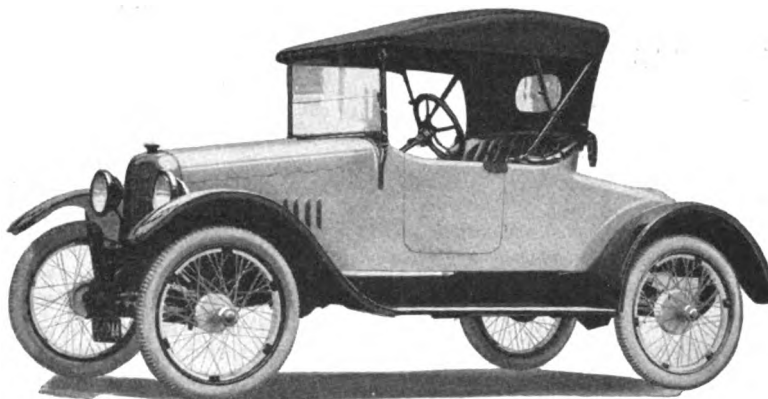
The Robinson Machine Company, Ecorse, Mich., has purchased ground where a factory will be erected to manufacture its new Truckford, for converting a Ford car into a one-ton truck. The company will employ about 50 men.

The Sulzberger & Sons Company, packers, which has developed a considerable business in Wilson's sterilized curled hair for automobile upholstery, has changed its name to Wilson & Co. Thomas E. Wilson is the president. B. H. Blocksom continues in charge of the curled hair department.

## Classy Bodies for Ford Cars

If garagemen and auto dealers have gained the impression that the new Ford model answers the requirements of car buyers who want something real classy and distinctive they are greatly mistaken. While the new hoods and radiators on the 1917 car represent an improvement, they are

able conversation while stopping. Room can be left to permit the setting of a table in the car so that when on tour or at a picnic a pleasant meal can be served. The seats are adjustable forward and back, and there is plenty of leg room for the car occupants when seats are all occupied.



Standard Finish—Peerless Gray  
DeLuxe Roadster Body for Fords—\$197.50 f. o. b. Detroit  
Specifications Same as Touring Except Tire Holders and Gasoline System

far from representing anything like the latest lines in body style.

The Detroit Auto Products Company report that the call for their “De Luxe” touring and roadster bodies continues to increase. In fact, the Ford announcement has had no effect whatever unless it has been to increase demand for bodies of a distinctive type.

The accompanying illustrations show how a Ford car looks when it is fully equipped according to the ideas of the Detroit Auto Products Company.

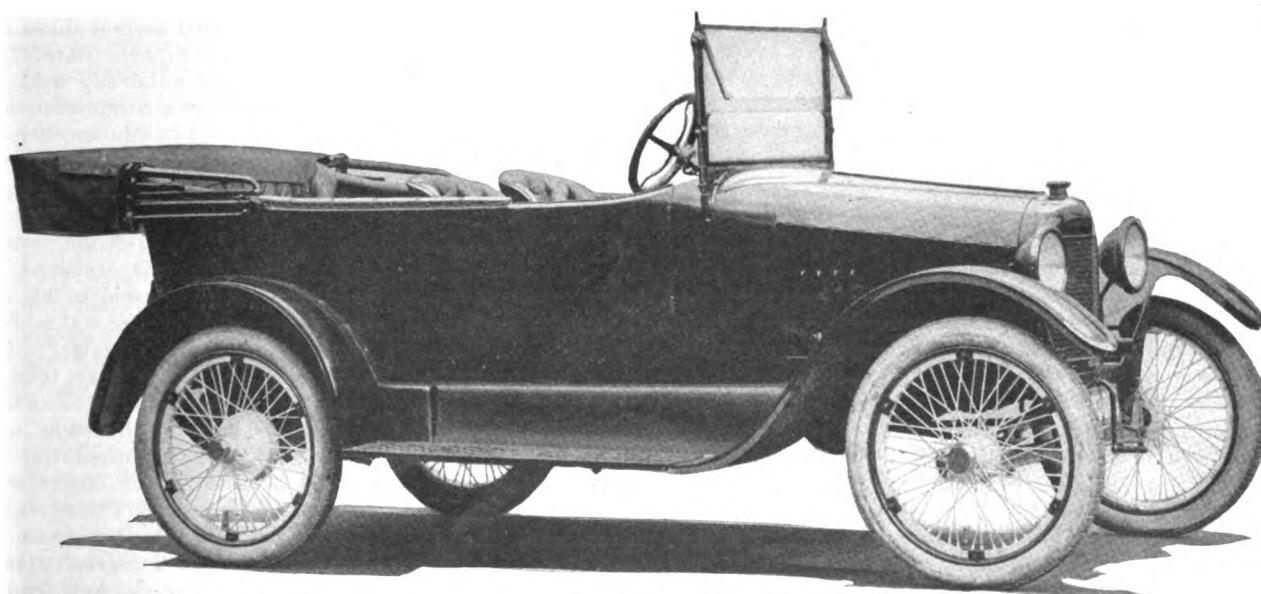
Both front seats in the touring car body can be removed at will. Either of the seats can be revolved to face the rear if one wishes to hold a comfort-

These seats can be moved back eight inches or any part of eight inches at any time and adjustments are easily and quickly made.

The roadster body has a style that is very fetchy. The specifications are the same as the touring car except tire holders and gasoline system, but the finish is in Peerless gray instead of in brown. The upholstery harmonizes with the name of the bodies—“De Luxe.”

The specifications of both cars include one-man top of black mohair; black enamel windshield, nickel trimmed with double glass; radiator slightly pointed, top curved, non-freez-

(Continued on page 48)



“DeLuxe” Equipped Ford Touring Car



# The Law *and* The Garage Trade

*THIS department is edited by CHARLES C. BOMBAUGH, LL. B., general attorney of the American Association of Garage Owners and a prominent practitioner in the federal and state courts; also lecturer and writer on commercial law. When information on any legal problem connected with the operation of your business is wanted, write this department.*

## THE VACATION PERIOD

Many interesting questions have been submitted to this department from several different states, but, unfortunately, the editor of this department has been absent on a short vacation and has been unable to answer promptly questions submitted.

## MICHIGAN GARAGEMAN WANTS TO KNOW

From Michigan the following is asked:

A man owns two cars and runs up garage bill of \$12.00 on one and \$35.00 on other. The one upon which the \$12.00 was run was seized by the holder of a chattel mortgage and taken from possession of garage keeper.

Garage keeper wants to know:

1st. Can car still in his possession be held for entire account on both cars?

The lien against the remaining car can only be enforced for storage, etc., of the particular car and not for something done regarding any other car.

2nd. Is the garage lien superior to the lien of a chattel mortgage?

We can find no decisions on this point in Michigan, but from what was said by the Appellate Court of Illinois in the case of *Rehm vs. Viall*, 185 Ill. App. 425, published in the August number of our journal, we feel that the courts would hold the garage lien first and prior to the mortgage.

3rd. Can storage be charged for the three months while awaiting settlement?

Certainly, for all charges up to the day of sale under the lien law.

4th. How long after 90 days are up must be advertised before sale?

We can best answer this question by suggesting that the garage owner read carefully Section two of the lien law. It absolutely is necessary to follow strictly the requirements of this section before advertising for sale; then the statutes of Michigan regarding the sale of property under a chattel mortgage should be carefully investigated and followed.

5th. After a car has been advertised for sale has the owner of the car the privilege of paying the bill, plus costs, etc., and stopping the sale?

It is our opinion that he has no such right, but could be a bidder at the sale if he so desired.

6th. The garage keeper in this instance requests what he should do after September 16th, which would be the end of the 90-day period following the time he refused to permit the owner of the car to remove it from the garage.

Now unless the owner of the garage has served personal notice of his claim for lien, together with an itemized statement of the account, upon the registered owner of the license plates of said automobile, then he would have no right to sell it, the law requiring him to serve such notice and statement of account 90 days before proceeding to advertise the car for sale.

These laws are remedial in their character and must be followed strictly. Unless they are, the sale of the property under the lien would not be a defense to any action brought by the owner of the car.

## SURRENDERING LIEN-PROTECTED CAR

Another inquiry comes from the state of Michigan regarding the surrendering of a car upon which the garage keeper has a lien, to the United States marshal.

From the information at hand, we do not know whether the demand by the marshal was in connection with bankruptcy proceedings or not, but in any event, the garage keeper should not surrender his possession unless a proper writ is served upon him, or an order of court is entered directing that the machine be turned over to some proper party.

In bankruptcy proceedings the order would be to turn it over to the receiver or trustee to be sold and that out of the proceeds would first be paid the lien of the garage keeper.

## THE INDIANA LIEN LAW AGAIN

Again referring to the Indiana lien law, which was published in our August issue, the writer suggests that the same would be more satisfactory if amended so that there could be no question of the right of the garage keeper to have his lien preferred over any chattel mortgage holder, or holder and owner of a machine which is sold on a so-called conditional sale contract, by which contract the legal title remains in the vendor until the full amount of the purchase price is paid.

This law could also be improved by providing for a sale to enforce his lien

without having to file a petition in the circuit court of the county where the automobile or motor truck is located. Some such provision as is provided for in the New Jersey law, by which a car can be sold upon publishing notices of sale for a certain length of time in some newspaper of general circulation, and by posting copies of the notice in a certain number of public places.

We must, of course, appreciate what the legislature of Indiana has done for us, but at the time that law was passed the legislatures had not in mind the extent of the garage business, and we believe that the time is now come when the garage man is entitled to greater protection.

Referring to the Michigan lien law, while it is probably the most satisfactory, with the exception of New Jersey, it is not all that can be desired for the reason that it requires that "personal service of a claim for lien, together with an itemized statement of the account upon the registered owner of the license plates of said automobile" be had.

In a great many instances we have had inquiries from garage keepers who had machines in their possession who did not know where the owner of the license plates could be found, and, of course, no personal service of a claim for lien could be had.

## A HOLDING CORPORATION

**Question**—Can an Illinois corporation legally hold stock in another Illinois corporation, also can officers or directors?

**Answer**—Both these points have been expressly decided several times by the Supreme court of this state. It has been practically uniformly held that it is ultra vires for a corporation to purchase and hold stock in another corporation, even if the power so to hold stock in another corporation is expressly given by the charter of the holding company. This follows the broad language of the Illinois decisions. Such holding of stock is said to be against the public policy of the state. In such circumstances, the secretary of state would undoubtedly refuse to issue a charter to an applicant which gave among its powers, the right to hold stock in another corporation. See *People vs. Chicago Gas Trust Company*, 130 Ill. 268; *People vs. Pullman's Palace Car Co.*, 175 Ill. 125; *Dunbar vs. American Telephone & Telegraph Company*, 224 Ill. 9; *Dunbar vs. American Telephone & Telegraph Co.*, 238 Ill. 456;

Converse vs. Emerson & Co., 242 Ill. 619.

Intimations are found in some of the cases that the reason for the rule allowing a corporation to hold any other kind of property, but forbidding it to hold stock in another corporation, lay in the public policy of the state as directed against monopoly or against any attack upon legitimate competition. The cases, however, go so far that it is not possible to draw any distinction which would make it legal for a corporation to hold stock in another company, even though the motive and object had no connection whatever with an attempt either at monopoly or at destroying competition.

### UPHOLDING A COMPENSATION ACT

Justice Brown of the Pennsylvania Supreme Court recently upheld the workmen's compensation act, which was attacked on four counts in an appeal in the case of William Anderson against the Carnegie Steel Company.

The overworked claim that legislation of this character conflicts with the fourteenth amendment of the federal constitution which was held to be groundless by Justice Brown, who said that "while rights of property created by the unwritten law cannot be taken away without due process of law, the common law itself may be changed by statute."

(Continued from page 41)

ing; crown fenders, beautifully curved to conform to wheels; ample front splash plate under radiator; dust shields to carry out stream-line effect perfectly; running board hangers; lamp bracket extensions; foot accelerator; tire holder supporting irons; standard finish in beaver brown with a small extra charge for other than standard finish; Stewart vacuum gasoline system, with enamel steel tank; demountable rims extra. For more complete specifications, see page 99, A. G. & A. D., August number.

This company's products are not intended to disguise Ford cars; they transform the Ford into cars of a new class. The owner gets all of the efficiency of the Ford car plus the most classy lines and most up-to-date features.

Enterprising garagemen should be in a position to build individual cars out of Ford chassis and Detroit "De Luxe" auto products. Why not write for descriptive catalogue, prices, etc., to the company's headquarters, 26 Sherman street, Detroit?

## The Organization Director's Corner

Just think of it! Fourteen hundred fifty new members joined this association last month. This large total was not obtained by taking in other organized bodies—each one was a single, individual membership. A record to be proud of, surely, but we venture the prediction it will not stand as the record for very long.

But, oh, perverse mortals. It is sad to relate that even in the face of such a record, and despite the many, many benefits this association makes available for members, our field men, working in widely separated sections, occasionally report meeting a garage owner, automobile dealer or repair man who is so blind to the advantages of organization and co-operation that he refuses to become a member of this active, result-producing association. In some instances they have voiced the opinion that it was "another graft"—"save the thought"—consider the insignificant sum involved.

At this point it might not be amiss to relate the anecdote of the man who tried to give away English gold sovereigns. On a wager, this gentleman, relying on his knowledge of human nature, stood, at the busiest hour of the day, at the corner of London bridge, with a big, pewter dish full of genuine gold sovereigns in his hand. Rattling the gold alluringly, he besought all who passed to take one—no strings to it of any sort. But one and all either stared incredulously, frowned suspiciously, or smiling knowingly, passing on unenriched.

It is quite impossible to help likening the person who would refuse the extended helping hand of this great father-mother organization to those who passed the gentleman of the anecdote and refused the free gift of solid gold.

While it may be true that those "doubting Thomases" have heard that others have tried to effect an organization of this industry and failed; it may even be that some such failure has come within their own experience and in so doing cost them a few dollars in real money. Still, why should any one attempt to discredit a proven organization because some fly-by-night promoters have tried, in time past or are still trying, to exploit this industry for their own private profit? This association was not formed for profit and one minute's intelligent consideration by any one will disclose the very apparent fact that his dues will in no wise cover the cost, to the association, of his membership. This deficit must be met by the revenue derived from the advertising columns of our journal.

With the new regime which is

ushered in with this issue, incorporating so many new features and new actual, practical, available benefits, it will be mighty hard for anyone approached to offer our field workers a logical reason why he should not unhesitatingly, even anxiously, become a member of this association. The above may sound like "tooting one's own horn," but the competitive nature of modern business, even extending into organization work, requires and makes permissible such acts. We have so much to "toot" about, because history never recorded such a marvelous success in organization work as has attended the efforts of this association during the past year.

But, best of all, it is a deserved success based on genuine merit for, in critical comparison with other organizations in this industry, it is from every viewpoint like a full-jeweled watch when contrasted with one bought with a dollar bill.

### GARAGE MEN ARE ORGANIZED

The garage men of Terrell have recently affiliated with the American Association of Garage Owners. This association has done more in the past eight months to put the auto, repair and accessory business on a better plane, both in regard to the garages and the public, than any other organization in the field. As members of this association the local men are in a better position to serve the public than ever before.

One object of the organization is to give the garage men their just dues, viz., all the business that rightfully belongs to them.

Car owners are respectfully asked to unite with the garage men of Terrell in every way that will help them in their business.

If each and every car owner would buy their supplies from local men only, the price of gasoline would take a sudden drop. This has been demonstrated in five states in the Union.

Good workmanship and standard and reasonable prices are now assured the auto public of Terrell and vicinity.—*Terrell Transcript, Terrell, Tex.*

### "FIRESTONE BILL"

Do you remember "Old Bill" Bailey, who made "Harris Oil" the favorite with nearly all the race drivers in the country and afterwards joined Barney Oldfield and Bill Pickens in the racing game? Well, the writer had a most enjoyable visit with him at Rochester, N. Y., where he has for several years been manager of the Rochester branch of the Firestone Tire & Rubber Com-

pany, and is affectionately known among his thousands of staunch friends as "Firestone Bill."

### SPEAKING OF PREPAREDNESS

A most amusing incident which, however, has a direct application to the urgent need of lien law legislation, was recently related to the writer by a Rochester, N. Y., garage owner.

A certain man, who had been a patron of this garage for some time had his car overhauled and, when it was finished, left the garage and did not return. Bill after bill was sent him, to which he paid no attention. Several months later the garage owner, seeing him passing, on the opposite side of the street, rushed over to him and demanded payment of the bill. The following dialogue then took place:

Customer—"I haven't got any money, I turned my bank account over to my father."

G. O.—"Well, you've got a good business; guess I'll sue you."

Customer—"Oh, well, that won't do you any good; I've turned that over, too."

G. O.—"Well, then, I will get an attachment on the car."

Customer—"You can't do that, either. I've given my father a mortgage on it."

G. O.—"If that's the case, guess I'll take it out of your hide."

Customer—"Oh, no, you can't strike me; I wear glasses, and it would be a serious criminal offense."

Can you beat it? Do you think that garage owner wants the lien law passed?

(Continued from page 12)

us. However, the prices we have been charging to our customers as well as tourists one and all alike is somewhat lower than those mentioned in your letter."

J. W. Lowe, of the Lowe Garage, Butler, Ind.: "In regard to a schedule of maximum prices for labor and storage, am very glad to say these meet with my hearty approval. About the A. A. G. O. signs, will these be forwarded or are they to be arranged for?"

Mr. Lowe's query is answered in our main article on this subject.

S. D. Smith, Hoopston, Ill.: "I suggest this schedule is a fair price to both and all concerned."

J. P. Gleason, Knoxville, Pa.: "I think the schedule prices are all O K."

## LOOK OUT FOR THESE FLIM-FLAMMERS

**R. S. Reese—National Supply Co.—Burwell Supply Co.—Orders taken, money collected in advance, no delivery of goods, mail addressed to them returned.**

"I am writing you in regard to a man who is getting money and orders for tires, tubes and supplies by misrepresenting the facts and promising to furnish goods and services at attractive prices, when, in fact, there is no such firm," writes Bro. H. B. Carpenter, of the Horicon Garage, Horicon, Wis.

"We wrote to the address given us and the letters came back marked 'Unable to deliver.'"

"This man is about 45 or 50 years old, smooth shaven, partly bald, a very good talker, and carries an order book filled with orders from all the cities and towns in the vicinity.

"He claims to make the territory every thirty days, and oftener when possible.

"Perhaps you can do some good in the journal by warning other garagemen."

The order blank was signed in acknowledgment by "R. S. Reese," and the firm name is National Supply and Cement Co. The rubber stamp notice which appears on the bottom of the memo mentions the Burwell Supply Co., of Chicago. No such firm can be located in Chicago and, according to Mr. Carpenter, the Detroit address is fictitious. Members who can locate "Reese" will confer a favor by notifying National Headquarters or the Horicon Garage.

**International Automobile League—F. A. Chapman—A. C. Bidwell—Harry Ames Van Auken**

The exposé of this bunch of crooks was made in the April issue of this journal and is repeated for use in the new Fraud Register for members' protection.

Chapman pleaded guilty to the charge of conspiracy with Bidwell, president of the league, to cheat and defraud. Bidwell and Van Auken, who is a noted criminal, paroled from Ionia, Mich., were indicted on similar charges.

This gang seems to have received their quietus and are not likely to attempt any more swindling operations on garagemen for some time to come.

**C. C. Mattee—Subscription solicitor, sells subscriptions without authority, does not make returns, cuts prices.**

C. C. Mattee has been acting as agent for the AMERICAN GARAGE in Montana and giving with this journal "News About Fords" for the price of our journal. He has taken the subscriptions, collected the money, and turned in

## New Patents Granted

**Brief Titles With Numbers Enabling the Reader to Send to Us for Complete Description—Enclose 10c Each to Cover Government Cost**

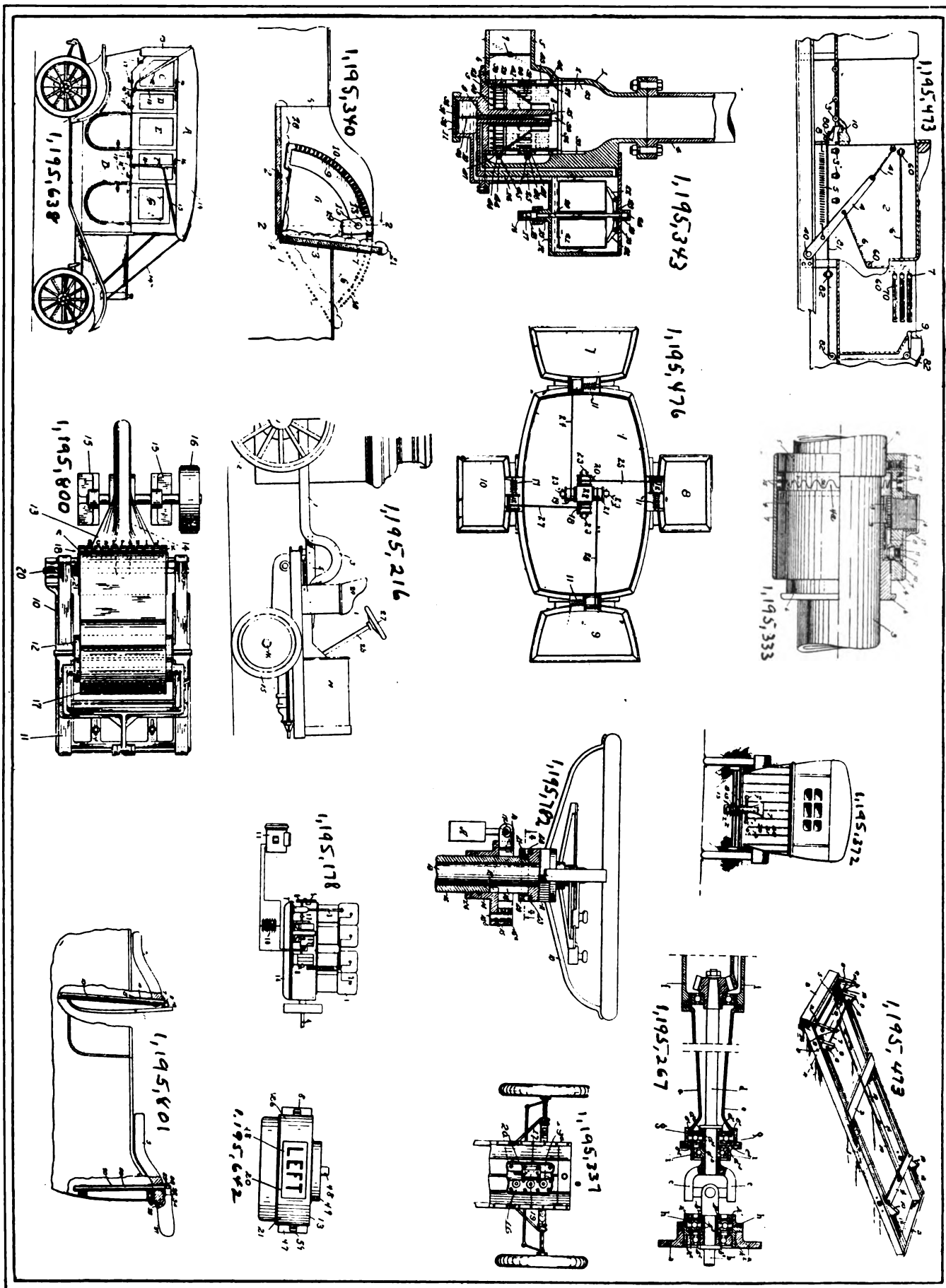
- 1,195,178. Electrical System for Automobiles. Joseph Bijur, New York, N. Y., assignor to Bijur Motor Lighting Company, New York, N. Y., a corporation of New York. Filed Feb. 2, 1911. Serial No. 606,123. (Cl. 171—315.)
- 1,195,216. Tractor-drawn Automobile. William Guy Hawley, Elmira, N. Y., assignor to American La France Fire Engine Company, Inc., Elmira, N. Y., a corporation of New York. Filed April 5, 1915. Serial No. 19,269. (Cl. 21—90.)
- 1,195,267. Connection Between Rear Axle and Chassis. Louis Ravel, Boulogne-sur-Seine, France. Filed April 30, 1914. Serial No. 835,520. Renewed May 12, 1916. Serial No. 97,183. (Cl. 21—90.)
- 1,195,333. Steering-Wheel Lock for Automobiles. Junius A. Bowden, Los Angeles, Cal. Filed Feb. 23, 1916. Serial No. 79,959. (Cl. 70—90.)
- 1,195,337. Tire-Vulcanizing Attachment for Automobiles. Ray Cannou and Stanley Gray, Paisley, Oreg. Filed Aug. 10, 1915. Serial No. 44,715. (Cl. 18—18.)
- 1,195,340. Adjustable Seat for Automobiles. John V. Dedrick, Weimar, Tex. Filed Feb. 18, 1915. Serial No. 9,148. (Cl. 21—43.)
- 1,195,343. Vacuum-Carburetor. William John En Earl, Monte Vista, Colo., assignor to The Vacuum Carburetor Company, Monte Vista, Colo. Filed Oct. 23, 1915. Serial No. 57,571. (Cl. 48—154.1.)
- 1,195,372. Signal-Light for Automobiles. George Logan, Washington, D. C. Filed July 13, 1915. Serial No. 39,609. (Cl. 116—31.)
- 1,195,417. Automobile-Jack. Ernest C. Townley, Allenville, Ill. Filed July 28, 1915. Serial No. 42,461. (Cl. 254—89.)
- 1,195,473. Door-Opening Mechanism for Automobiles. Caleb Jackson, U. S. Navy, and Ernest W. Morgan, Bremerton, Wash. Filed May 12, 1915. Serial No. 27,551. (Cl. 268—5.)
- 1,195,476. Automobile Direction-Indicator. José Sanchez Juarez, Mexico, Mexico. Filed Jan. 6, 1915. Serial No. 779. (Cl. 40—61.)
- 1,195,628. Removable Window for Vehicles. Edwin A. Armstrong, Highland Park, Ill.; Zuleime B. Armstrong, executrix of said Edwin A. Armstrong, deceased. Filed Sept. 20, 1912. Serial No. 721,344. (Cl. 21—62.)
- 1,195,642. Automobile Signaling Device. Isaac Bauer, Middletown, Conn. Filed Oct. 2, 1915. Serial No. 53,778. (Cl. 40—52.)
- 1,195,782. Locking Device for Steering Wheels. Oscar F. Coleman, El Paso, Tex. Filed March 29, 1916. Serial No. 87,569. (Cl. 70—90.)
- 1,195,800. Tire Building Machine. George F. Fisher, Plainfield, N. J., assignor to The Hartford Rubber Works Company, a corporation of Connecticut. Filed June 29, 1915. Serial No. 36,933. (Cl. 154—10.)
- 1,195,801. Automobile Top. Walter J. Gano, New Rochelle, N. Y. Filed Aug. 19, 1915. Serial No. 46,278. (Cl. 21—62.)

neither names nor cash.

Mattee has had no authority to represent the A. A. G. O. publication and he, or no one else, has ever had any authority to take subscriptions for this journal at a cut price, or to use any other journal or any article of merchandise as a premium.

Beware of crooks who come to you and your friends in the guise of subscription agents.

# A Page of New Auto Trade Inventions



### **Martin Lindeman and Wm. Riff— Skipped Owing Garage Bill—Own Car and Should Be Apprehended**

Two young men who have been running a lunch room in Watertown, Wis., for the last half year or so recently left town under cover, leaving a large number of creditors. The Service Garage (R. A. Guentenberg) happens to be one of the unlucky ones to the extent of \$42.36. They have a Studebaker, six cylinder, seven-passenger car, which could be attached if located. The two parties in question are Martin Lindemann and Wm. Riff (possibly Riffenberg). It is believed these men are now in St. Louis. The secretary of state at Madison was written to for the data, so that the car could be traced, as these fellows may be posing under an assumed name. The Wisconsin license number is 58449 and the factory service number of the car is 607823.

National headquarters requests the co-operation of the members in St. Louis and elsewhere in apprehending the "skips" and getting some form of legal action on the car.

Information may be communicated direct to Bro. Guentenberg or to this office.

### **COVER TO PREVENT OIL SPRAYING**

The Auto Parts Company, Providence, R. I., is introducing a new breather pipe for the Ford car that, being equipped with a cover, prevents oil spraying over the motor and the inside of the hood. Having an easily removed cover, it is a simple matter to renew the supply of lubricant and a fine screen prevents foreign elements reaching the oil reservoir. The breather is fitted with an integral hook that fastens around the bolt, holding the timer, and removing the cover does not affect this hook. The breather is nicely finished, is easily attached, and retails at 50 cents.



The Illinois Cyclo Company, Bloomington, Ill., has commenced the manufacture of a new light tractor, so built as to be available in drawing cultivators, rakes, planters and other implements, in addition to plows.

Help the man who helps you; our advertisers are helping you in the support of your journal; help them, as a slight return, by patronizing them; and let them know it.

## **Random Reflections by Director Marcher**

### **OUR CREED**

**We believe in our county—the United States of America.**

**We believe in her constitution, her laws, her institutions, and the principles for which she stands.**

**We believe in her future—the past is secure.**

**We believe in her vast resources, her great possibilities—yes, more, her wonderful certainties.**

**We believe in the American people, their genius, their brain, their brawn.**

**We believe in their honesty, their integrity and dependability.**

**We believe that nothing can stand in the way of her and our commercial advancement and prosperity.**

You may search the claims of benefits of every organization and association on earth and you will find that no one of them, nor all combined, effects or even claims to effect, such a comprehensive list of manifold benefits to its members at anything like such an insignificant outlay of money as does the A. A. G. O.

**Optimism is the big impulse of today. We can't help believing in bigger to-morrows.**

Such a statement may appear to be aggressive and monopolistic, because of its unbending positiveness of assertion, but please remember, you are not asked to believe anything about this association which you can not easily prove to be true.

**Our course is onward: therefore, our standards for efficiency are raised daily.**

It may do no harm to recount a list of these benefits, inasmuch as there seems to be a reluctance on the part of a large percentage of members to avail themselves of the good things provided for them.

**Knowledge rules the twentieth century. Every business is susceptible to betterment.**

First comes Protection—then Legal Advice—Legislation. Then, in order, Technical Advice—Mechanical, Electrical; a Collection Service, which is really wonderful in the results it obtains. A perfected Record of Frauds and "Dead-beats," see elsewhere in this issue. A quick-action Employers' Employment Service, see page 44.

**Success is a manifestation of forethought and enterprise, rather than of natural superiority.**

Then consider the final completion, after the most exhaustive research, of the wonderful Insurance Department that has been opened for your benefit (see pages 34-35). The Standardizing of Tourists' Repairs and Storage and their direction to members for fair treatment.

**The thinker is universally in command, but unapplied knowledge is useless.**

Rapid strides have been made all along the line in creating interest and pledging support for the Lien Law in all states excepting New Jersey, which is the only state in the Union possessing an acceptable Lien Law ap-tolerable condition (see pages 17 and 56).

**You may lead an ass to knowledge, but you can't make him think.**

There can hardly be two opinions regarding the harmful influence the excessive cost of gasoline has had upon the whole automobile industry. You are earnestly urged to get into the nation-wide agitation this association has inaugurated for relief from this intolerable condition (see pages 17 and 56).

**Initiative is ample capital for anybody. Only the doubting are poverty-stricken.**

The Bureau of Registration of Automobile Workers will, without doubt, prove a boon to employers, as it will have a strong tendency to produce a guaranteed, vouched-for class of workers and relieve employers of a large part of their present worries. See page

**The best is never attained—the last word never spoken on any subject—the ultimate improvement never reached.**

Taken in its entirety this number of our official journal will show such marked superiority over any work ever before done by a similar association that the A. A. G. O. will be placed so far in advance that it will be hard to catch for many years to come.

**Men who cling to obsolete tools and rules are doomed to failure.**



# LOZIER

*Name Guarantees Service*

Reliable Dealers Wanted in Illinois, Indiana and Michigan

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1462 South Michigan Avenue  
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All LOZIER Parts Carried in Stock

For Other Territories Write to Salesmanager, Lozier Motor Co., Detroit, Mich.

# Doings in The Garage and Auto Trade

## NEW GARAGES, AUTO DEALERS, REPAIR SHOPS, ETC.

Philadelphia, Pa.—Garage, 51x90, costing \$5,300, Redfield st., near Lansdowne ave.

Louisiana, Mo.—Ralph Stewart and Charles Clairbourn, livery barn converted into garage, 60x120, and additional space for washroom, toilets, etc.

Devils Lake, N. D.—H. E. Mayor Garage, 75x150, costing \$9,616, contract let.

Baltimore, Md.—Westinghouse Garage & Supply Co., incorporated.

Sioux City, Ia.—Central Machine Works & Auto Co., \$10,000 brick garage and repair shop, 6th and Pearl sts., 50x75, 2 stories, work under way.

New York, N. Y.—Olean Taxi Co., Inc., erecting \$10,000 garage.

Deer Lodge, Mont.—Branscomb & O'Neill Garage, 50x134, about complete.

Galesburg, Ill.—Harrison Coddington Garage, 22x90 and 70x40, reinforced concrete, 2 stories, fireproof, under way.

Nacogdoches, Tex.—Nacogdoches Garage Co., incorporated for \$10,000, about to start business.

Fargo, N. D.—Glide Automobile Co., salesroom for Glide car of Peoria and one other (higher priced) car.

Payette, Id.—Walling & Clays, modern 60x130 garage building completed, agents for Overland and Buick cars.

Louisville, Ky.—Overland Louisville Co., new \$20,000 garage, Broadway and Floyd sts.

Robinson, N. D.—Wick Bros., building large garage and opera house.

Grand Forks, N. D.—McKinley-Fuller Motor Co., 2-story brick garage, 3rd st. and International ave., 50x140, reinforced concrete faced with brick; showrooms, storage space, shop, etc.; agents for the Dodge car.

W. Philadelphia, Pa.—Henry E. Behoff, new store and garage building, 16th and Arch sts., 3 stories, 46x75.

Allentown, Pa.—Diehl Furniture Co., entering automobile storage and repair field, 80 cars capacity.

Tulsa, Okla.—J. F. Pitt, brick and reinforced concrete garage on S. Main st., \$11,250, nearly complete.

Pawnee City, Neb.—Buntin & Oh-schenck, new garage building with stock of cars; Henry & McKinley, repair shop in connection.

New York, N. Y.—Ahneman & Younkheere, 2-story brick \$15,000 garage, 50x141, on Bailey ave., near Summit pl.; in course of erection.

Westchester, Pa.—J. Reilly, old hotel stable converted into garage and enlarged; general storage, repair and car agency business.

Howell, Mich.—Charles Hoff, garage, 50x160, to be occupied by Britten & Foey, old and prominent garage firm.

Brunswick, N. J.—Joseph Miller, opens opera house garage, operated in connection with the Simplex Automobile Co.

Warren, Ark.—Warren Auto Co., converting Thompson warehouse into a first-class garage; general repair and storage business, agency for Saxon and Briscoe cars.

Joplin, Mo.—Southwest Overland Supply Co., incorporated for \$20,000, will deal in automobiles and motor car accessories.

Grand Forks, N. D.—Sims Auto Co., 2-story 65x150 garage building, pressed brick front, plate glass windows, etc., \$35,000.

Burlington, Wis.—Uagner \$15,000 garage, brick and concrete, terra cotta front, 50x165, under way.

Rochester, N. Y.—J. C. Hemple, large new building to be built on East ave. for automobile livery.

Plant City, Fla.—Milton Fletcher, new garage building on E. Reynolds st., 55x44; has Ford agency.

Brownwood, Tex.—Hall Garage, on E. Lee st.; capacity doubled, garage, sales agency and repair work.

Spring Lake, N. Y.—Joseph T. Smith Livery Co., new garage and auto repair shop, in course of construction.

Allentown, Pa.—Lehigh Valley Motor Co., new garage completed, 90x120 ft., 1 and 2 stories.

Grafton, N. D.—Grafton Auto & Machine Co., new garage building, 40x100.

Stockton, Cal.—W. C. Clark, new \$25,000 garage building completed, 50x100, reinforced concrete and best of appointments.

Beaumont, Tex.—Beaumont Cadillac Co., new building, 60x120, on Pert st., show rooms and garage; home of the Cadillac car.

Greensburg, Ind.—Huffman Alter Co., new salesrooms, agency for Dodge car.

Butler, Pa.—Independent Auto Co., \$5,000 capital.

Watertown, Wis.—New Service Garage, opened by Julius Detert and Arnold Pankow, general garage business, including agency for the Dodge car.

Cincinnati, O.—Blevins Auto Sales Co., opened \$60,000 home, Court st. and Gilbert ave., early in August.

Topeka, Kan.—Southwick Auto Supply Co., opening motor car equipment and rubber supply store, Goodrich agency.

Erie, Pa.—H. A. Nelson re-enters garage business, will build new \$20,000 building, State and French sts., brick, tile and iron construction, 68x105.

Huntsville, Ala.—R. H. Bloom, garage and livery on Main and Washington sts., completed.

Great Falls, Mont.—Western Motor Co., garage, salesroom and repair shop on Central ave., building operations started.

Grand Forks, N. D.—Modern fireproof 2-story brick garage for Dinnie Bros., \$35,000, work started.

Waterville, Wash.—New \$30,000 garage, to be built and occupied by the Consolidated Witters and Lavmance garages.

Webster City, Ia.—Hanson & Tyler Auto Co., new garage, 66x120, 2 stories and basement, to cost \$20,000, work started.

Reading, Pa.—Lance Motor Car Co. will convert old First Christian church into garage.

Kearney, Neb.—New Chalmers agency to be established here by L. M. St. John and Jack Chapman, under name of Chapman-St. John Motor Co.

Philadelphia, Pa.—Walnut Garage Co., \$9,000 garage under way.

Brooklyn, N. Y.—City and Suburban Homes Co., building \$40,000 garage, Park ave. and St. Edwards st.

Cedar, Ia.—C. A. Davis Garage, 80x60, cement and brick, in course of erection.

Superior, Wis.—New garage and repair shop opened by C. A. Hedding, agency for Ford cars.

Newark, N. J.—Albert Chase and J. B. Perlman lease 2-story brick building, agents for Mitchell car.

Raleigh, N. C.—State Motor Supply Co., just opened for business, agent for Chandler cars.

Olympia, Wash.—St. John & Titus of Centralia open branch Ford agency and garage.

Mobile, Ala.—Miller Motor Car Co. opens Chandler agency on Dauphin and Jackson sts.; have branches at Brewton, Ala., and Pensacola, Fla.

Dallas, Tex.—Dallas Oakland Sales Co., incorporated to handle Oakland cars.

Lapine, Ore.—Lapine Garage Co. incorporated \$5,000 by William Foss.

Monticello, Ill.—John Pembroke, building fireproof garage, 60x80, 2 stories and basement, to be completed Dec. 1.

Pine Bluff, Ark.—Arkansas Automobile Co. opening new garage, 100 cars capacity, costing \$10,000, night and day service.

Lamesa, Tex.—New garage for R. Simpson under way.

Detroit, Mich.—L. C. Spalding building 2-story garage on E. Columbia st., near Brush.

Fargo, N. D.—Fargo Motor Sales Co. about to build \$30,000 garage, 3 stories and basement, 50x130, general garage business in connection with Ford agency and service.

Cameron, Tex.—W. W. Chambers building \$6,000 garage.

Lake City, Mich.—McDonald Auto Sales Co. opens branch Ford agency.

Huron, S. D.—Wilson Barber Auto Co., incorporated \$50,000, will handle Reo cars.

Cleveland, O.—King-Cleveland Co. organized to take over distribution of King car, leasing former Maxwell salesrooms at 1924-26 Euclid ave.

New York, N. Y.—Biltmore Garage leases garage property at 205-13 E. 47th st.

Holland, Mich.—New garage completed and occupied by Westrate & Brower Overland agency.

Bismarck, N. D.—New \$50,000 garage under way for the Missouri Valley Motor Co.

Spokane, Wash.—New Jamieson Garage opened Aug. 1, home of Pathfinder car. The Hanauer-Graves Co. have obtained site and will build garage.

Chesaning, Mich.—Theo. S. Greenfelder and others to enter the garage business with \$30,000 capital.

Hastings, Neb.—To have two new garages, one by G. A. Brandes and other by Sherman Bros. First starting, last well under way.

**"You'll growl till you get LYON'S"**

Over 400 Different Numbers Carried in Stock  
Bigger Profit

Immediate Service

Bronzed Bushed  
Accurate Fit

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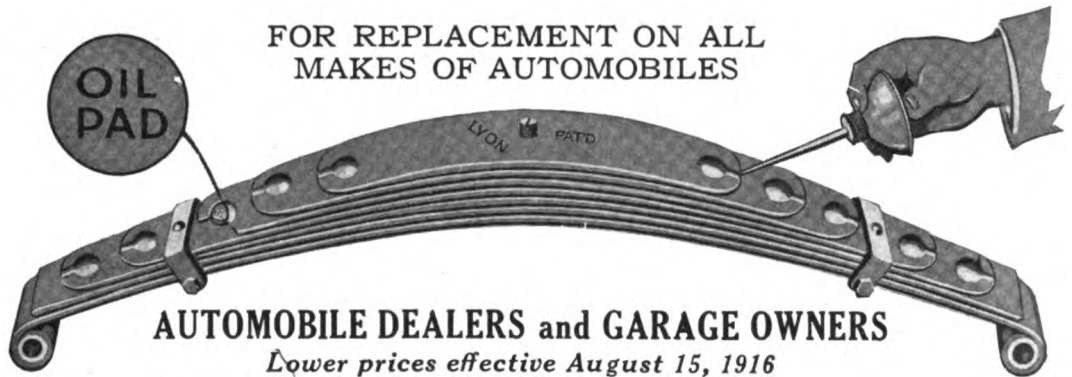
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Is proving its value in Garages all over the country. GIVES you exact DAY, HOUR and MINUTE each and every repair job is started and finished. Base your charges on exact time consumed and you can't help but make money in your repair department.

STOPS arguments with your customers. MAIL the COUPON, or write for one on 10 days trial. No obligation to purchase. Guaranteed—Accurate—Durable.

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Please send me COSMO TIME STAMP on 10 days trial. At the end of 10 days I will either return the Time Stamp or remit you the price, \$7.00.

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Address.....

Quality Springs Guaranteed



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REPAIR CO.**

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CHICAGO

### TRUNKS FOR AUTOS

THIS MEANS THE

**KAMLEE  
COMPANY**

440 E. Water St. Milwaukee



Trunks for all makes of cars and for all purposes  
Dust-Proof, Rain-Proof, Strong, Light, Convenient, Handsome  
Liberal Profits for Garagemen and Dealers. Send for our proposition

## REPAIRMEN

**What Is Your Answer to This Statement?**

"My motor uses too much oil and gasoline, the plugs foul, valves require grinding and carbon cleaned out frequently, is noisy, lacks power and life."

**Your Answer Should Be the Same as Ours:**

### Regrind the Cylinders and Fit New Pistons and Rings

STANDARD CAST IRON, LIGHT  
WEIGHT SEMI CAST IRON, AND  
BUTLER'S Special Alloy PISTONS.

*This is Our Specialty*      *Strictly Quality Work*

We have on file measurements of every piston we make,  
every cylinder we regrind.

*Write today for prices and information.*

## BUTLER MFG. CO.

Est. 1897

1124 E. Georgia St., Indianapolis, Ind.

Santa Rosa, Cal.—Lewis Richardson opens auto repair shop.

Clarkston, Wash.—J. J. Hoeppner to erect garage and livery building.

Mt. Union, Pa.—Mt. Union and Huntingdon City Garage Co., incorporated \$50,000, by A. R. Peterson et al.

Hibbing, Minn.—Gus Johnson and Oscar Lindberg open new garages, heating system and otherwise modern.

Council Bluffs, Ia.—New Steinhauser & Micholl garage and auto store building completed and open for business, agents for Chandler and Maxwell cars.

Suffolk, Va.—Nansemond Motor Car Co. opens for business with Overland agency.

San Diego, Cal.—Tod Smith opens auto supply store, specializing in oils and tires.

Hancock, Mich.—Quincy Garage & Supply Co. starting to build large, modern garage.

Frankfort, Ky.—Frank English & Co. opening auto repair shop.

Magnolia, Ark.—O. A. Reid and H. P. Carrington have leased Decker building for garage and salesroom.

Sacramento, Cal.—D. F. Bloom, expert mechanic, opens repair shop, specializing in Fords.

Lincoln, Neb.—Chas. H. Shore has formed the Nebraska Oldsmobile Co. and will open a large Oldsmobile agency.

Green Bay, Wis.—The Stukart Garage has been completed.

Suffolk, Va.—W. M. Atkinson opens storage garage.

Philadelphia, Pa.—Dempsey Bros. building 115-car capacity garage at Ed-dystone.

Waseca, Minn.—Aughenbaugh & Kelly complete new auto hospital, storage and show rooms; attractive building; ready for business.

Pierre, S. D.—Eureka Garage Co., incorporated for \$15,000, by Stephen Harrison et al.

New York, N. Y.—Hunts Point Garage Co. \$40,000 garage being built at Southern blvd. and Barrett st.

Hamburg, N. Y.—Service Garage, incorporated for \$5,000, by R. F. Knoche et al.

Stillwater, Minn.—Schneider Bros. open garage at Lake Elmo; agents for Studebaker.

Cadillac, Mich.—New garage and repair shop opened by Stickney & Langenberg.

Waterloo, Ia.—F. A. Houghton, new repair shop on W. 5th st. opened.

Edginton Lane, W. Va.—Ohio Valley Auto Co., new modern garage completed.

Norristown, Pa.—Chas. Mann to open new garage Oct. 1.

Green Bay, Wis.—New \$4,000 garage in course of erection at De Pere by the Bergstrom Garage Co.; 120x60, hollow tile, cement, etc.

Cleburne, Tex.—Kennard-Barnhill Motor Co. opening new sales agency, handle Chevrolet cars and car parts.

New York, N. Y.—Bullowa & Bullowa to build 5-story garage, 100x120, Broome and Thompson sts., \$50,000.

Bloomington, Ind.—Hill & Graham, \$10,000 auto salesroom, brick and stone, will house Ford agency.

New Castle, Pa.—Sadler garage completed and running.

Casey, Ia.—Dorf Bakke occupies new garage built by Rotton & Nelson.

Champaign, Ill.—Tom Wilson converted old Orpheum theater into garage and salesrooms.

New York, N. Y.—S. Osgood Bell & Co. leased garage from plans to be erected 64th st and 3d ave., capacity 300 cars.

Fargo, N. D.—Murphy-Palmer Motor Co. organized to handle Chalmers car and do a general garage and auto supply business.

Champaign, Ill.—Stanley I. Benford and E. E. Householder opened new auto repair shop.

Little Rock, Ark.—Allen-Jackson Motor Car Co. opening sales agency, agents for Allen and Jackson cars.

Marion, Ind.—W. A. Gol and W. H. Putname, car agents, leased building and are opening large garage and car agency.

Dickinson, N. D.—Chris Bertch of Bismarck opens garage and Studebaker car branch.

Grand Forks, N. D.—F. C. Paskie of E. Grand Forks opens accessory store.

Lincoln, Neb.—Bethany Garage, in Bethany section, opened with fully equipped repair and paint shop.

Tulsa, Okla.—New \$12,000 garage for Lon Conway on Main, near 6th st., completed.

Butte, Mont.—The Dreibelbis garage and store on N. Main st. completed.

Emmett, Id.—B. C. Bowers will build modern, fireproof, 50x130 garage, including show room, ladies' rest room, etc.

Waterloo, Ia.—Waterloo Auto & Supply Co., new fireproof, \$35,000 building under way.

Sinking Spring, Pa.—Byron C. Bair, modern garage, repair shop and store, ready for business Nov. 1.

Brooklyn, N. Y.—Willys-Overland Co. leased \$100,000 garage and store site at St. Mark's and Underhill aves.

Mt. Clemens, Mich.—E. H. McDonald opening auto sales agency.

Allentown, Pa.—Traylor Motor Garage Co. to build and operate branch garage.

Butte City, Mont.—William Barth building \$15,000 modern garage, 100x105, 2 stories.

Syracuse, N. Y.—Studebaker Garage, \$50,000 steel, concrete and brick structure, 51x118, 2 stories, front white enamel brick, green tile and plate glass, complete Oct. 1.

Grand Forks, N. D.—New \$35,000 garage let by four Devils Lake business men.

Louisville, Ky.—J. J. Gaffney, brick and concrete garage, 145x160, under way.

West Chester, Pa.—Samuel Crawford replacing burned garage and workshop.

Detroit, Mich.—The Stoepel Co., E. Columbia st., to have 2-story fireproof garage and salesroom, 50x100.

Philadelphia, Pa.—Chas. M. A. Stine to build \$7,000 garage on Madison, near 11th st.

Shreveport, La.—Campbell-Chalmers Co., new fireproof, 40x150, garage and salesroom started on Market st., opposite Western Union, to cost \$12,000; repair plant in connection.

New York, N. Y.—In Bronx district, Nicholas Serrachine to build large garage.

Milwaukee, Wis.—Milwaukee Garage Co., \$8,000 building, W. 24th and Wells sts., permit issued.

Shelby, Ia.—John E. Peterson, Persia, Ia., garageman, will build.

Dillon, Mont.—Dilly & Shepherd opened auto sales agency.

Gresham, Ore.—R. R. Carlson building 2-story garage, 50x60.

## BUSINESS CHANGES, EXTENSIONS, ETC.

Bellefontaine, O.—George W. Cronley purchased the Cronley Garage building and will enlarge same; Ford agency.

Ft. Wayne, Ind.—Henry Herscher buys Piercetone garage and will rebuild and enlarge it; will operate the business.

Auburn, Neb.—Workmen & Rosean have sold their garage to A. R. Avery.

Three Rivers, Mich.—The Speese Auto Sales Co. contracted for 12 months' supply of Chevrolet cars.

Traverse City, Mich.—Grand Rapids Overland Co. purchase garage interests of John A. Ott & Co., consolidating with their business. Mr. Ott remains local manager.

Marquette, Mich.—Asire & Palmer, auto dealers, have leased the Mitchell Garage on E. Ridge st.

Washington, Ind.—Homer Osmon and Richard Williams have purchased the Washington Auto Co.

Nevada, Ia.—Harry C. Rouch disposes of his interest in the Nevada Auto Co.

Manistee, Mich.—The Auto Garage Co. purchased by the National Sales Co.

Elmyra, N. Y.—J. N. Cooper building a large addition to his Edic and Roe Garage, on W. Church st.

Fort Wayne, Ind.—Cadillac agency and interests have been consolidated with the Randall Auto Sales Corporation, under new title of Steinhart Auto Co., to handle Cadillac and Dodge cars; new and larger quarters are planned.

Jamestown, N. Y.—Peterman Garage Co. installed complete vulcanizing plant.

Grand Forks, N. D.—O. C. Platz enlarging his garage; local agent for Overland and Fords.

Macomb, Ill.—George T. White purchased interest with J. W. Stewart in Park Garage.

Dillon, Mont.—Montana Auto Supply Co. moved into large, handsome garage, said to be largest in state.

Muscantine, Ia.—Day and Night Garage secured new quarters on W. Front st., greatly increasing facilities.

Orange, Tex.—C. A. Russel, Jr., bought Sabine Garage from A. L. Mc-Han.

Parkersburg, W. Va.—Standard Garage Co., Charlesburg, has bought the Auto Service Co. Garage on Market st., specializing in storage, repairs and accessories.

Anderson, Ind.—J. J. Garrett becomes owner of the Atlas Garage as well as building; has associated with him William Zimmerman, Roland Gwinn and Robert Gilmore.

Fargo, N. D.—F. A. Bush leased the newly completed Heller Garage; will conduct a general garage and taxicab business.

Rogers, Ark.—Dean & Head, garagemen, dissolved partnership, J. T. Dean continuing.

Baltimore, Md.—Catonsville Garage on Frederick ave. purchased by new company, headed by George W. Miller.

Indianapolis, Ind.—North Side Garage, 13th and Central ave., secures big electrical equipment installation.

Edwardsville, Ill.—Edwardsville and Broadway garages consolidated, under proprietorship of O. H. Giese.

Cass Lake, Minn.—Cass Lake Garage to have addition, 50x130, built of concrete.

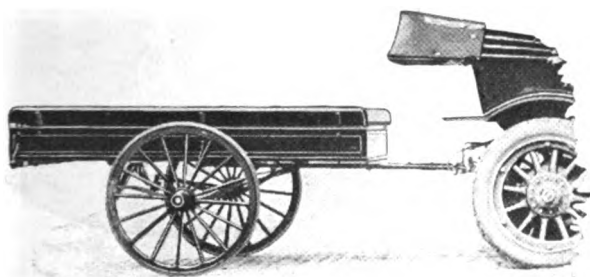
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## GEARS for Automobiles Our Specialty

**Y**OU DO NOT HAVE TO LAY UP YOUR CAR and send to the manufacturers for repair parts or replace gears, as we are prepared to furnish promptly transmission, differential or timing gears, and any other part made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or Foreign manufacture. Workmanship and quality guaranteed.



WASHINGTON BLVD. AND MORGAN STREET - CHICAGO, ILLINOIS



## Trailers — Trailers

**PRICES, \$45 to \$150**

**Built from Hardwood**  
Send us your specifications  
Express bodies or stake  
rack. Plain bearing or  
double annular ball bearing.

**WE GUARANTEE THEM ALL**

**The Service Auto Trailer Co.**  
279 John R Street :: DETROIT, MICH.

## WOODWORTH SPRING COVER and LUBRICATOR

*Makes Cars Ride Like New*

**T**HE WOODWORTH SPRING COVER and LUBRICATOR is a covering which laces over the springs, completely enclosing them. The covers have a lining of felt wicking which is saturated with oil before the covers are put on, holding enough oil to last for at least 10,000 miles of running.

The WOODWORTH SPRING COVER and LUBRICATOR keeps the springs perfectly lubricated and perfectly clean.

Better than any shock absorbers.

Very easy to put on and very neat in appearance.

*Send for prices and description.*

**LEATHER TIRE GOODS CO.**  
Sole Manufacturers Niagara Falls, N. Y.



Lincoln, Ill.—Bee Hayes becomes sole owner of the Official Tourists' Garage, Howard Barclay retiring and engaging in garage business at Chestnut.

Petoskey, Mich.—Overland Garage to erect a branch on Bay and Howard sts.

DeKalb, Ill.—Francis Quin to add another story and otherwise improve his garage.

Great Bend, Kan.—George S. Cheuffer sold his auto repair business to Will Shultz and L. D. Hanselman.

Grand Rapids, Mich.—G. R. Austin, leading automobile man, leased Buick Garage.

Richmond, Ill.—National Garage sold to Roy Hendrickson.

Palmer, Neb.—C. H. Grammer purchased the Heck Garage.

Great Bend, Kan.—C. F. Mull new owner of the Santa Fe Trail Garage.

### FIRES

New Model Garage, Erie, Pa.: \$100,000 loss.

Kosmehl & Green, garage, Charter Oak, Ia.; \$6,000.

Stanton Auto & Supply Co., garage and store, Stanton, N. D.; total loss, including nine cars.

Abbott Garage, Troy, N. Y.; small loss.

Central Garage, Waukegan, Ill.; small loss.

Overland Garage, Fresno, Cal.; \$20,000, including ten cars.

William Wolstencraft & Sons, garage, Philadelphia; \$5,000, including four cars.

Thorne Garage, Hedrick, Ia.; \$8,000 including eight cars.

Smith & Reeves, Fargo, N. D.; garage total loss, including three cars.

Hauger Bros., garage, Cameron, Mo.; \$2,500, including four cars.

Slama Auto Co., Humboldt, Neb., garage; \$1,900.

Weaver Garage, Springfield, O.; completely gutted.

Wilcox Auto Co., Burley, Idaho, garage; loss total, with twenty-five cars.

Collins & Dodd, garage, Waterloo, N. Y.; partial loss, cars and large stock of tires saved.

Kressler Auto Co., Fostoria, O., auto body plant; \$18,000.

Hargraves Garage, Goodland, Kans.; partial loss, including six cars.

C. F. Collicott Garage, Lanesboro, Ia.; total loss, including four cars.

Lincoln Garage and Repair Shop, 2175 West Fourteenth street, Cleveland; total loss, including ten cars.

Day and Night Garage, Maysville, Ky.; \$15,000.

### MISCELLANEOUS NEWS

The Fenwick Auto & Manufacturing Co. and the Walton Motor Co., of Evansville, Ind., have consolidated and raised \$25,000 additional capital.

The Sweeney Automobile School of Kansas City will build a \$250,000 home, work on same having already been started.

Ground has been broken for the new H. H. Franklin Manufacturing Co. plant extension in Syracuse, N. Y. It will represent an added investment of \$500,000 including machinery.

Grand Rapids, Mich., business men have pledged \$50,000 to the Higrade Motors Co., manufacturers of auto trucks, to induce them to locate their factory in that city.

The Packard Motor Car Co. will build a 10-story office and factory in Long Island City, N. Y.

Work on the new Ford motor plant in Brooklyn, N. Y., to cost \$250,000, has been started.

The Maxwell Motor Co. will erect a large warehouse and assembling plant in St. Paul, Minn.

The Grand automobile factory is being moved from Findlay, O., to Cleveland.

The Ford Motor Co. will build an \$8,000,000 plant in Detroit, installing blast furnaces and auto parts producing machinery. A tractor plant will be added in the near future.

The Jordan Motor Car Co. of Cleveland has completed its new plant and is ready to start production.

The Corliss Truck Co.'s new factory at Corliss, Wis., is ready for operation.

The Heseltine Motor Corporation plans to build a large auto factory at Buffalo, N. Y. The company will manufacture light touring cars.

The Chevrolet Motor Car Co. has completed a branch factory at Oakland, Cal., which is said to be the largest motor car plant on the Pacific coast.

The All-Steel Motor Car Co. will commence production at the new factory in Macon, Mo., Sept. 1.

The Wichita Falls (Tex.) Motor Co. has increased its capital from \$140,000 to \$400,000.

Hilliard, a suburb to Columbus, O., is to be the home of a new automobile factory owned and operated by the Dobyms Motor Car Co.

The Hassler Co. of Indianapolis will build a new accessories factory on East South street in that city.

H. E. Merrithew, former vice-president and general manager of the O. & M. Supply Co., of Kansas City, has been appointed district manager by the Find-eisen & Kropf Co., manufacturers of the Rayfield carburetor.

The latest Detroit entrant into the motor car manufacturing field, the Liberty Motor Car Co., has set a record-breaking sales mark for a new product and is away to a flying start. More than \$3,500,000 worth of Liberty sixes have already been sold since the car was first announced.

The big McMahon livery barn on Federal street, inside the Chicago elevated "loop," has been converted into a garage. The barn is a landmark, and its conversion into an auto livery and storage place is significant.

D. B. Zimmerman, president of the Overland Sales Company, Chicago, has acquired an interest in the Milwaukee Auto Engine and Supply Company and has been elected its secretary and treasurer. He will assume his new duties in the near future.

W. L. Agnew, who has for four years been advertising manager of the Hudson Motor Car Company, has resigned to join the Chalmers Motor Company, with which organization he will be connected in the new sales promotion department which has been started by President Hugh Chalmers.

George W. Hanson, the veteran automobile dealer of Atlanta, Ga., dropped in on Detroit and Chicago during the month. It is stated that Mr. Hanson is about to embark on a very large scale in the manufacture of a light six-cylinder automobile to sell at about \$865. Don Ferguson, former chief engineer of the Cartecar Company, and later with the Oakland Motor Car Company, has been retained as con-

sulting and designing engineer. Asa Candler of Coca Cola fame is actively interested in this company, according to reports.

Urving G. Thomas, chief engineer and factory manager of the Lozier Motor Company for the last year and a half, has severed his connections with this company to become chief engineer and factory manager of a new company which is being formed in Cleveland with \$2,000,000 capital to manufacture a six-cylinder car at about \$1,050 in price.

### REGROUND CYLINDERS

The Butler Manufacturing Co., 1124 East Georgia street, Indianapolis, who specialize in regrinding cylinders and pistons, offer their customers an excellent opportunity to fit the exact needs of their motor in that they furnish either standard cast iron, light-weight, semi-cast iron and aluminum alloy pistons.



Improved standard engineering with a special metal has made the light-weight, high-efficiency semi-cast iron piston possible. The design of this piston allows for close clearance. A narrow rib is used to support the head, and slightly heavier bosses are included which have other advantages. The pistons are designed in such a manner that the tendency is for the metal to draw in over the piston pin and not expand, as in the majority of cases, and score the cylinder wall. Extremely light wall construction is possible. All pistons are drilled in the groove below the bottom ring.

A complete record of every piston made and the size of every cylinder reground is kept by this concern. This protects the repairman and insures the car owner of always being able to secure a piston, should an accident occur and one be broken.



# Come to Detroit

## The Automobile Center and

**LEARN THE AUTOMOBILE BUSINESS**

Detroit trained men get preference over all others and get jobs quickly. No other city, no other school can give you what Detroit offers. Factories know us, endorse our school, glad to get our graduates, offer them territory in which to sell cars and start garages.

EARN \$75.00 to \$300.00 A MONTH

Our equipment is complete. Students actually build cars from the start to the finish, getting factory training in assembling, block testing, road testing, everything. Special complete course in Oxy-Acetylene Brazing and Welding, separate from regular course. All leading types of starting, lighting and ignition systems in operation. 6 cylinder Lozier and 8 cylinder King used for road instruction. We have a new Chalmers "6-30" chassis with 3400 r. p. m. motor.

DETROIT IS PLACE TO LEARN—START ANY TIME

There are 44 Auto Factories in Detroit. You can't get this advantage anywhere else. You make faster time here and get practical instructions. School open all the year. Enter classes any time, any day. Three classes daily—morning, afternoon and evening. Auto factories write and phone for men constantly to fill permanent places. Why not fit yourself for one of these good paying positions?

ADDITIONAL BUILDING AND EQUIPMENT

33,000 sq. ft. of additional floor space in our new building—thousands of dollars worth of new equipment—plenty of room for students to work. This comes with our new building at 687-89-91 Woodward Ave., which we will occupy about Aug. 15th. Our school has grown by leaps and bounds, students have come from all over the world. Men have left after graduating and started in business for themselves; others have accepted good jobs both in Detroit and over the country. Their work has proven that we train them rightly. We are constantly adding new equipment. Our students get the best and latest things to work on. Our electrical department is thorough and complete. It is in charge of one of the most competent electrical instructors.

ACT QUICKLY—NOW—DON'T WAIT

Get full particulars, get "Auto School News" and New Catalog. They are both absolutely free. Come to Detroit, the "Heart of the Automobile Industry" and learn right. Remember you can enter classes any time, any day. The price of our course is based on giving full value. Therefore we cannot give another course free. Graduates in the complete auto course are competent to handle farm tractors. Act quickly—now. We have no branches. Write or come direct to this school.

MICHIGAN STATE AUTO SCHOOL, The Old Reliable School, A. G. ZELLER, Pres. 687-89-91 Woodward Ave., 11-19 Selden Ave.—Detroit, Mich., U.S.A. 28 Auto Bldg.

MONEY-BACK GUARANTEE.

We guarantee to qualify you in a short time for a position as chauffeur, repair man, salesman, tester, demonstrator, garage man or automobile dealer, paying from \$75.00 to \$300.00 monthly or refund your money. We have constantly more requests for Detroit trained men at good salaries than we can supply.



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## 5000 CHIBECO FAN BELTS

leave our factory every day. Are you getting your share of the 5,000? Are you selling CHIBECO Leather Fan Belts or just Fan Belts?

Furnish your customer with belting that gives lasting satisfaction, made by a firm who has manufactured leather belting for over a quarter of a century.

Write today and we will gladly furnish you with name of our nearest jobber.

**Chicago Belting Co. 100 North Green Street CHICAGO, ILL.**



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**\$30.00 \$25.00 \$27.00 \$15.50 \$16.50 \$15.00 and up**

Expert repairing and rebuilding. Every machine in perfect condition and guaranteed 5 years. Write for our liberal free trial offer and cut rates prices.

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**ATTORNEY-AT-LAW**

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PEDESTRIANS

## WARN THEM

with the "Liberty Bell," the Automobile Signal of distinction. Most signals *scare* people instead of *warning* them, but when they hear the mellow tone of the "Liberty Bell," they step smilingly to one side. It does not *offend*—its warning is *polite*, not boisterous.



"Liberty Bell" Signa

Hundreds of automobile owners have adopted this dignified signal and there is a good profit in it for dealers.

The "Liberty Bell" is strongly made and is handsomely finished—as beautiful as it is efficient.

Write today for our Liberal Proposition to Dealers

Patents on both design and mechanism. Beware of imitations.

THE LIBERTY BELL COMPANY

401—28 The Arcade

Cleveland, Ohio

# A Review of The Market

## Gasoline

The feature of the supply market during the past month was the decline of 2c in the gasoline market, the new tank wagon price being 16½c Chicago. Eastern prices are 22c New York, 23c Boston, 22c Philadelphia, 21c Pittsburg, 21c Cleveland, 16½c Detroit, 16½c Kansas City and 14.2c St. Louis.

The decline is due to the lower crude oil market, Cushing oil in Oklahoma registering a 90c price. It is expected that the crude will drop to 70c and that lower gas prices will follow. On the other hand, there are believers in a higher market by the turn of the year and corresponding prices for gas. All things considered, a 1 to 1½c further decline in gas is more than probable.

Despite the control of the petroleum markets by large interests and the arbitrary fashion in which stocks, prices and nearly everything else entering into the situation are manipulated in the interest of pelf, the law of supply and demand is said to have had freer play during the last few months than at any time in recent years. Even the most powerful interests at times must yield to the superior power of natural law, although the operations of this law may for the most part and at many times be restricted and more or less neutralized.

The Indiana territory and the great Whiting refinery of the Standard Oil Co. seem to be the one powerful factor in the entire American market that exerts a lowering influence on prices. The independent refiners are opposed to monopoly, but are so positioned by their powerful rival's strategy and influences that they, paradoxically as it may seem, find themselves in the attitude of favoring higher prices.

## Iron, Steel and Metals

This is an active market and operations are on a scale which make all hopes of lower prices futile. The war demands, coupled with industrial requirements for export and domestic consumption, keep values firm with upward price tendencies.

Copper has advanced to around a 28c basis and is strong at the new quotations. Tin is active, mainly for future delivery. Lead has been a shifting and unsteady market. Aluminum is strong and shows an advance of 60@62c for No. 1 virgin. Nearly all descriptions of old metal are higher.

The following table of prices is compiled by an expert and are reliable:

	Sept. 6, 1916	Sept. 8, 1916
<b>Pig iron, per gross ton—</b>		
No. 2X, Philadelphia.....	\$19.50	\$16.00
No. 2, Valley furnace.....	18.25	14.50
No. 2 Southern, Cincinnati.....	16.90	13.90
No. 2, Birmingham, Ala.....	14.00	11.00
No. 2, furnace, Chicago.....	18.50	18.50
Basic, delivered, eastern Pa.....	19.75	17.00
Basic, Valley furnace.....	18.00	14.50
Bessemer, Pittsburgh.....	21.95	16.95
Malleable Bessemer, Chicago.....	19.00	13.50
Gray forge, Pittsburgh.....	18.70	14.70
L. S. charcoal, Chicago.....	19.75	15.75
<b>Billets, etc., per gross ton—</b>		
Bessemer billets, Pittsburgh.....	45.00	24.00
Iron bars, Pittsburgh.....	45.00	24.50
O.-h. sheet bars, Pittsburgh.....	45.00	25.00
Forging billets, base, Pittsburgh.....	69.00	32.00
O.-h. billets, Philadelphia.....	48.00	32.00
Wire rods, Pittsburgh.....	55.00	29.00
<b>Finished iron and steel, per lb. to large buyers—</b>		
	Cents	Cents
Bessemer rails, heavy, at mill.....	1.47½	1.35
O.-h. rails, heavy, at mill.....	1.56½	1.34
Iron bars, Philadelphia.....	2.659	1.459
Iron bars, Pittsburgh.....	2.60	1.35
Iron bars, Chicago.....	2.35	1.25
Steel bars, Pittsburgh.....	2.60	1.35
Steel bars, New York.....	2.769	1.519
Tank plates, Pittsburgh.....	4.00	1.35
Tank plates, New York.....	4.169	1.519
Beams, etc., Pittsburgh.....	2.60	1.35
Beams, etc., New York.....	2.769	1.519
Skelp, grooved steel, Pittsburgh.....	2.35	1.30
Skelp, sheared steel, Pittsburgh.....	2.45	1.35
Steel hoops, Pittsburgh.....	3.00	1.35
<b>Sheet, nails and wire—</b>		
Sheets, black, No. 28, Pittsburgh.....	2.90	1.90
Galvanized sheets, No. 28, Pitts.....	4.15	3.60
Wire nails, Pittsburgh.....	2.60	1.65
Cut nails, Pittsburgh.....	2.60	1.60
Fence wire, base, Pittsburgh.....	2.55	1.50
Barb wire, galvanized, Pittsburgh.....	3.45	2.50
<b>Old material, per gross ton—</b>		
Iron rails, Chicago.....	18.75	13.50
Iron rails, Philadelphia.....	20.00	18.50
Carwheels, Chicago.....	11.50	11.75
Carwheels, Philadelphia.....	15.50	14.00
Heavy steel scrap, Pittsburgh.....	16.00	14.50
Heavy steel scrap, Philadelphia.....	14.75	15.00
Heavy steel scrap, Chicago.....	15.75	11.75
No. 1 cast, Pittsburgh.....	14.50	13.00
No. 1 cast, Philadelphia.....	16.00	14.00
No. 1 cast, Chicago (net ton).....	12.00	10.00
No. 1 R. R. wrot, Philadelphia.....	20.00	16.50
No. 1 R. R. wrot, Chicago (net ton).....	16.00	11.00
<b>Coke, Connellsville, per net ton at oven:</b>		
Furnace coke, prompt.....	\$3.00	\$1.50
Furnace coke, future.....	2.50	1.75
Foundry coke, prompt.....	3.50	2.00
Foundry coke, future.....	3.50	2.25
<b>Metals, per lb. to large buyers:</b>		
	Cents	Cents
Lake copper, New York.....	28.00	18.00
Electrolytic copper, New York.....	28.00	17.50
Spelter, St. Louis.....	8.50	14.25
Spelter, New York.....	8.75	14.50
Lead, St. Louis.....	6.80	4.75
Lead, New York.....	6.75	4.90
Tin, New York.....	38.87½	33.25
Antimony, Asiatic, New York.....	12.00	28.00
Tin plate, 100-lb. box, Pittsburgh.....	\$5.75	\$3.15

## The Stock Market

Motor, tire and accessories stocks have been irregular during the past month, adversely affected by the threatened strike and favorably affected by the good business conditions and the discounting of reported crop losses. Some of the tire stocks, notably Firestone, have enjoyed a season of quite remarkable activity. Republic Truck and Fisher Body have been newly added to the list. United Motors, General Motors, Chevrolet, Chalmers, Maxwell, Overland and Studebaker have shown considerable weakness.

## The quoted list follows:

	Par	Bid	Asked
American Motor Truck Co.....	\$ 10	...	\$ 5
Ajax Rubber.....	50	\$64	66
Allen Motor.....	100	...	100
Briscoe Motor.....	100	...	...
Chalmers, common.....	100	165	167
Chalmers, preferred.....	100	98	101
Chandler.....	100	104¼	104½
J. I. Case, common.....	100	...	...
J. I. Case, preferred.....	100	79	89
Chevrolet.....	100	205	211
Coe.....	1	...	.37
Champion Auto Equipment.....	1	.75	.97½
Consolidated Car Co.....	10	...	10
Continental Motor, common.....	100	36½	37½
Continental Motor, preferred.....	100	91	94
Curtiss Aeroplane & Motor.....	100	20	30
Eagle-Macomber.....	1	...	...
Elgin Motor Co.....	10	8	9
Emerson Motors Co., pfd.....	10	...	10
Emerson Motors Co., com.....	10	...	6
Farmack.....	1	...	.50
Federal Air Craft & Motor Co.....	10	...	...
Federal Truck Co.....	10	...	...
Firestone Tire & Rubber Co., common.....	100	89	...
Firestone Tire & Rubber Co., preferred.....	100	112	...
Fisher Body Corp.....	...	39¼	40
Fiske Rubber Co., common.....	100	...	135
Fiske Rubber Co., first pfd.....	100	109	111
Fiske Rubber Co., second pfd.....	100	147	...
Ford Motor Co., Canada.....	100	340	355
Fostoria Light Car Co., com.....	100	...	100
Fostoria Light Car Co., pfd.....	100	...	100
Grant Motor Co., pfd.....	100	...	...
General Motors, common.....	100	550	579
General Motors, preferred.....	100	120	121
Goodyear Tire & Rubber Co., common.....	100	221	230
Goodyear Tire & Rubber Co., preferred.....	100	106	108
B. F. Goodrich Co., common.....	100	73½	73¾
B. F. Goodrich Co., preferred.....	100	113¾	114½
Gray & Davis, common.....	100	...	255
Gray & Davis, preferred.....	100	93	98
Haynes Auto Co.....	...	...	...
Hendee, common.....	100	31	31½
Hendee, preferred.....	100	98½	97½
Hupp Motor Co., common.....	10	6¼	7
Hupp Motor Co., preferred.....	100	...	99½
International Motor Co., com.....	100	...	7½
International Motor Co., pfd.....	100	17	20
Kelly-Springfield Tire, com.....	100	71¼	72
Kelly-Springfield Tire, 1st pfd.....	100	95	97½
Kelly-Springfield Tire, 2d pfd.....	100	...	...
Kelsey Wheel Co.....	100	295	...
Lee Tire & Rubber Co.....	...	45¼	46¼
Locomobile Co. of America.....	100	20	22½
Maxwell Motor, common.....	100	83½	84
Maxwell Motor, 1st pfd.....	100	85	87
Maxwell Motor, 2d pfd.....	100	55	56
Miller Rubber, common.....	100	275	280
Miller Rubber, preferred.....	100	112	115
Motor Products.....	...	62	68
National Rubber.....	...	...	6½
Packard Motor, common.....	100	175	180
Packard Motor, preferred.....	100	101	102½
Paige-Detroit, new.....	10	...	49
Peerless Truck & Motor.....	50	24½	24¾
Perfection Tire & Rubber.....	1	.90	...
Perlman Rim.....	...	...	...
Portage Rubber, common.....	100	65	75
Portage Rubber, preferred.....	100	101	105
Pull-More Truck Co.....	...	...	...
Regal Motor, preferred.....	100	18	26
Reo Motor Car.....	10	43	44
Reo Motor Truck.....	10	37¼	38
Republic Motor Truck.....	...	55	56
Richard Auto Mfg. Co.....	10	10	20
Saxon.....	100	73	75
Simplex.....	100	80	...
Springfield Body, common.....	...	84	86
Springfield Body, preferred.....	120	120	125
Standard Motors.....	10	6	6½
Sterling.....	10	...	11
Stewart-Warner Speed., com.....	100	102½	104
Stewart-Warner Speed., pfd.....	100	108	110
Studebaker Corp., com.....	100	128	128½
Studebaker Corp., pfd.....	100	107	111
Stutz Motors.....	...	65½	66
Sun Motor Co., preferred.....	100	...	105
Swinehart Tire & Rubber.....	100	85	86
United Motors.....	...	63¼	63½
Universal Motors.....	5	8.13	8¼
U. S. Rubber, common.....	100	58	58½
U. S. Rubber, 1st pfd.....	100	110½	112
U. S. Rubber, 2d pfd.....	100	74	90
White Co.....	50	53¼	54
Willys-Overland, common.....	25	48½	48¾
Willys-Overland, preferred.....	1	104¼	105½
Woods-Mobllette, new.....	1	.07	.08½

# Do away with all CARBON troubles forever

**A Success for the Dealer—  
A Success with the Car Owner—**

There's a *real* demand for a *real* carbon remover and car owners are quick to realize the value



We need more live dealers to help us distribute. We do not ask our dealers to buy our goods until they have felt the demand, so we have a special co-operative selling proposition to submit to you.

The HART-BELL CARBON REMOVER is a device for introducing live steam into the cylinders of the motor. Live steam is the best agency for loosening carbon. The carbon is blown out through the exhaust while the motor is running. The HART-BELL CARBON REMOVER is quickly and permanently attached and can be used as often as desired. Sells for \$5.00 and there is good profit for you.

Write at once for the selling plan.

**UTILITY PRODUCTS CO.**  
823 Times Bldg. New York City  
or  
**MOTOR EQUIPMENT CO.**  
1436-38 S. Michigan Ave. Chicago, Ill.



**Price \$5.00**

The HART-BELL is absolutely guaranteed to you and to car owners

**Can be  
put on  
any car**



*"Ask the man who's used it."*

## CLEANS AND POLISHES AUTOMOBILES

The only known polisher and cleaner that will remove Road Oil and Tar.

No hard rubbing—apply, leave it set a while, wipe off.

Preserves, cleans and polishes the varnish.

Dealers will find a ready sale for POLAC.

Order a sample can and be convinced.

### Motor Equipment Company

1438 Michigan Avenue  
Chicago, Ills.

## The "Six-in-One" Dry Storage Battery



**Equals Six Dry Cells on Every Charge**

**Non-Leakable**

**Non-Spillable**

### Lighting

Automobiles  
Miners' Lamps  
Motor Boats  
Flashlights  
Christmas Trees  
Country Homes  
Fishing, Camp-  
ing, Hunting

### Power

Automobile  
Starters  
Motor Boats  
Electric Trucks  
Street Car and  
Railway Systems  
Telephone  
Systems  
Meter Testing  
Ignition Systems  
of all kinds  
Electric Toys  
Dental  
Instruments  
Massage  
Machines



\$2.50

### Dealers and Garagemen

A few reasons why the Venus Dry Storage Battery should be handled by you.

It gives 40 per cent more efficiency than the common wet battery.

The Venus Battery answers every purpose, be it for lighting an ordinary bicycle lamp or propelling a five-ton truck.

Each Venus Battery can be recharged hundreds of times.

Write for Dealers' Proposition.

We still have some territory open. You may be the lucky man.

**Venus Electric Lamp Company**

64 Second Ave.

DETROIT, MICH.

## Jobs Await Skilled Mechanics in Detroit Factories

☞ Come to Detroit—Five Dollar a Day Jobs waiting for skilled mechanics.

☞ We teach you the business in 100 hours—a new and practical system.

☞ Endorsed by all of the leading automobile factories.

Terms to deserving applicants

Get particulars

### Machinists Training School

140 East Fort St. :: DETROIT, MICH.

# ATTENTION MOTORISTS

## IF YOU ARE INTERESTED IN LOWERING THE EXCESSIVE COST OF GASOLINE

At the coming convention of the American Association of Garage Owners, to be held in Detroit in November, 1916, one or more of the following bills, all of which are now before Congress, will be chosen as the means of accomplishing this result: The Howard Bill, to prohibit the exportation of gasoline; the Steenerson Bill, to allow the Federal Trade Commission to fix the price; the Ferris General Leasing Bill, to throw open millions of acres of government-owned oil lands. Get in the movement—sign this pledge and work for the good of this cause.

### PLEDGE

I, the undersigned, a qualified voter in these United States of America, hereby pledge my support to the bill or bills urged for passage by the A. A. G. O. and agree to use my influence with the senators from my state and the representative from my district to compel favorable consideration of said legislation, and I also agree to interest one or more voters in this movement in behalf of honest prices for a product that has become within a decade one of the world's great staples—gasoline.

☐ Dealer  
☐ Garage  
☐ Repair Shop } ..... Address .....

**This Is the A. A. G. O. Form of Petition to Be Circulated Among Voters. Cut It Out and Get Busy With It.**

## DISPLAY ONE OR BOTH OF THESE SIGNS

And get a share of the **TOURIST Trade** being directed to **A. A. G. O. MEMBERS** for fair treatment based on **STANDARDIZ-  
ING PRICES for REPAIRS and STORAGE.** (Complete information on the campaign being made will be found in this issue.)

### DAY SIGN

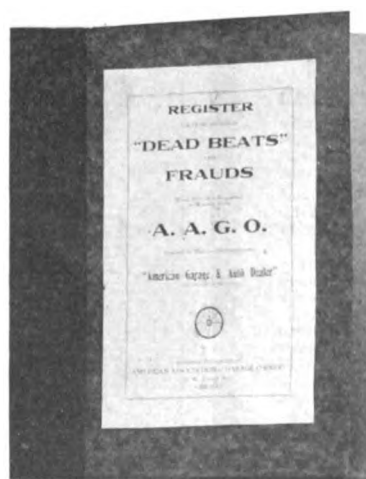


Iron Enamel Sign, 9x18, Two-faced  
—to Project From Door Jamb.



A Beautiful Pair of Pennants, Purple-  
White Letters. 12x30. Per pair, \$1.00

Despite the high cost of material we have succeeded in purchasing a quantity of both kinds of Signs that we can furnish at \$1.00 each while they last. Hurry.



INDEX THE RECORD OF FRAUDS. Book is well made of the toughest kind of material. Will last for many years. Price 35c.

### NIGHT SIGN



Glass Sign, 9x18, to Hang in Window  
in Front of Light.

### WEAR A LAPEL BUTTON

AND SHOW YOUR  
LOYALTY TO THE  
ASSOCIATION



BLUE & WHITE ENAMEL, Heavy GOLD Plate  
Price 50c

**Address AMERICAN ASSOCIATION OF GARAGE OWNERS**

**National Headquarters, 53 West Jackson Boulevard,**

**CHICAGO, ILLINOIS**



Thirty-two years of actual experience  
should be sufficient Why you should buy  
**HIGGINS QUALITY SPRINGS**  
**FOR REPLACEMENT**



They are guaranteed. Made without Center Bolt—Boltless. Painted Black  
**Ready for the car when needed**

"They are **strongest** where the old type of springs is **weakest**."

Higgins Quality Springs for replacements are made of the best grade of motor car spring steel of a special analysis, properly heat treated, scientifically constructed and rigidly tested for elasticity, tensile strength and anti-fatigue properties.

These are equipped with rebound clips, leaves properly lubricated with a special high grade spring lubrication before springs are assembled for shipping. It is impervious to water, **prevents rust**, and will last many times as long. This method eliminates that **squeaky** noise that is so prevalent among springs, and which tends to lower the value of a car. It is also an anti-friction preparation—a **life saver to springs**.

No better springs could be placed on a car, and the dealer and garageman who sells them for replacements will have a satisfied trade, build up a good business and make increased profits. Wire or write for our nearest distributor for quick service.

Address "Garage Dept." for the **Big Catalogue B-1916**, containing over 450 different kinds of Quality Springs, also for discount.

**HIGGINS SPRING & AXLE COMPANY, Racine, Wisconsin**

**A RAPID-FIRE EMPLOYMENT SERVICE**  
DESIGNED TO MEET THE EMERGENCY NEEDS OF  
EMPLOYERS in General, BUT MORE PARTICULARLY  
**THE NEEDS OF A.A.G.O. MEMBERS**  
**IS NOW AVAILABLE.**

The many calls received and the obvious need of some agency that will take the employers' interests into account and give them a real, intelligent service along these lines is responsible for the establishment of this

**Special Service**

It will be the aim of this Department to respond quickly to the call of employers for workers of any classification with good men, and, when possible, by REGISTERED WORKERS who have undergone a strict examination and thereby carry the recommendation of this Department. An honest effort will always be made to send *the right man* for the position to be filled.

To the end that this service may be *de luxe* in all respects, every employer should urge his employes to apply for registration in the BUREAU OF REGISTRATION OF AUTOMOBILE WORKERS of the AMERICAN ASSOCIATION OF GARAGE OWNERS, for, by so doing, he will be *serving his own ends*, and this sort of co-operation will tend to qualify and elevate the class of help available for all purposes.

The very modest fee of \$1.00 to A. A. G. O. members and \$2.00 to non-members will be charged for this service. The payment of this fee will entitle the employer to call for and receive five (5) *satisfactory* workers of any classification. ALL EMPLOYERS, NO MATTER WHERE LOCATED, SHOULD ENROLL FOR THIS SERVICE WITHOUT DELAY. Address

**American Association of Garage Owners, Dept. M, 53 West Jackson Blvd., Chicago, Illinois**

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## The Successful Garage Manager

is the one who lets the people know he is seeking their trade—that he is in business to serve them. The same is true in any business. Wherever you see a

## Federal Electric Sign

installed, you will not see any one loafing.

You should realize that many autoists who need garage facilities would stop at your place if there was an electric sign to tell them where you are.

Let us help you plan a Federal Electric Sign for your garage. Address Dept. S.

## Commonwealth Edison Company

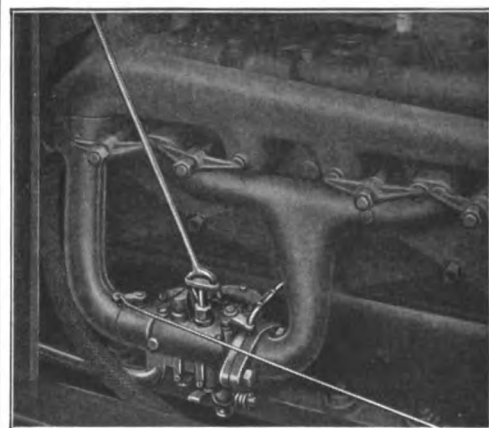
Edison Building  
72 West Adams Street, Chicago

If located outside Chicago address: Federal Sign System (Electric),  
Lake and Desplaines Streets, Chicago

742

## Model N Marvel Carburetor

Designed especially for Ford Cars.  
Fits right in place of regular installation, no changes whatsoever.



Model E Marvel Carburetors are standard on Buick, Olds, and Oakland.

Model E Marvel Carburetors greatly improve Overland and Studebaker cars. Catalog on application.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retail for \$8.00 complete.

**MARVEL CARBURETOR COMPANY**  
FLINT, MICHIGAN, U. S. A.

Patronize our advertisers and build up your Association and Journal

**FREE  
AIR**

**COSTS MONEY**

when the customers for whose convenience you provide an air station forget to turn off the flow after they have filled their tires.



Guard against this waste by attaching a  
**Schrader Automatic Inflating Valve**  
to your air hose.

Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve. Made to fit any diameter of hose from 1-4 in. to 5-8 in.

**PRICE ONE DOLLAR**

Manufactured by

**A. SCHRADER'S SON, Inc.**

783-793 Atlantic Ave., Brooklyn, N. Y.

Schrader products were awarded a Grand Prize and two Gold Medals at the Panama-Pacific International Exposition. "There's reason."

## Something New

BRANDT'S LIQUID SOAP. All soap for automobile work. Call us up.

4 CENTS PER POUND IN BARRELS.

Phone Main 576

**H. E. BRANDT**

150 West Austin Ave.

**CHICAGO**

**Your Ford Is Ahead of Its Price Class  
in Everything but Looks**

The Detroit Streamline Hood and Scroll Type

**Radiator Shell**



will give it the appearance and fashion of the highest priced cars of the season—\$16 complete—no need or sense to pay more.

**Dealers:**—Liberal discount to the trade. Write or wire today for details.

**IMMEDIATE DELIVERIES GUARANTEED**

**THE HARRY SVENSGAARD SALES CORPORATION**

214 Jefferson Avenue, East, Detroit, Michigan

Factory—Ionia, Mich.

Warehouse—Windsor, Ont., for Canadian Deliveries



This wonderful writing machine goes about its business Silently, Efficiently, and Economically. It gets more out of the day's work. Owners and operators swear by it—not at it.

**VICTOR TYPEWRITERS**

Dealers and Agents all over the country have found in the VICTOR a bonanza. Write about our Agency Plan. Booklet free without including any obligation.

**Victor Typewriter Sales Company (INC.)**

General Offices - SCRANTON, PA.  
CHICAGO OFFICE, 203 S. Dearborn St.

**TIME \$\$\$\$\$\$**

**THINK THIS OVER—**

Do you keep as careful a check on how your employees spend their valuable time as you do upon your cash? WHY NOT! Their time has a high cash value to you. A few minutes a day lost through lack of automatic supervision soon adds up into a heavy cash loss.

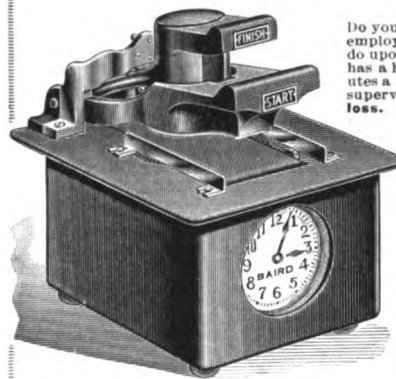
**BAIRD Moderately-Priced Time Recorders**

are as important in time checking as the cash register is in cash checking. They relieve high-salaried foremen of much unnecessary supervision—they keep your workers up to top-notch production—they weed out the "drones."

Time Recorders, Stamps, Clocks, etc., for every timing purpose. Moderately priced. Write us today. **Interesting Booklets Free!**

**BAIRD EQUIPMENT CO.**

322 W. Ohio St., Chicago  
Phone, Superior 2071



**ALUMINUM CAN NOW BE WELDED**



At last a reliable alloy that will weld aluminum parts and do it properly has been placed on the market. Every garage and repair shop will need it. Write for particulars.

**CHEMICAL SPECIALTIES CO.**  
KANSAS CITY, MISSOURI

# The Garage *and* Shop Market Place

A Mart where readers can Buy, Sell, Rent and Exchange Merchandise; Obtain Help and Employment, announce their willingness to Serve Professionally, etc., &c. Our readers are invited to make generous use of it at the small cost of 25 cents per line until further notice.

## "MARKET PLACE" ADS

In this section will introduce your article or business to over 10,000 pure trade readers, including Garages, Repair Shops, Dealers, Supply Stores, etc.

This list includes live prospects in the trade and contains no waste or unproductive circulation.

For quick results, mail your ad today. We will write your ad free; simply tell us what you have to offer.

**A. A. G. O. Headquarters**  
537 S. Dearborn Street CHICAGO

## SOAP THAT WILL SAVE YOUR EMPLOYEES' TIME

A new liquid mechanic's soap in containers in your wash-room will save the time of your men. Clean and sanitary, economical — a grease-cutting soap containing nothing injurious to the skin. No grit. Put up in paste form in tubes, liquid in pint cans. A good seller for your show case. *Garagemen and Dealers used in every town.* Write at once to  
**RESEARCH CHEMICAL CO.** Great Northern Building, CHICAGO

## AAA SCORED CYLINDERS

Repaired by Patented Electric process. Filled with a silver and nickel alloy. (Eliminates Grinding.) No warping or enlarging of cylinder bore. Same piston and rings used. Reshipped 24 hours after received. Also do welding and grinding.

### L. LAWRENCE & CO.

1522 S. Michigan Ave. Chicago, Ill. 292 Halsey Street Newark, N. J.

**"HURRY-UP" RADIATOR REPAIR SERVICE.** Sheet metal work that pleases. Fenders, hoods, gasoline tanks, etc., repaired and built to order. **CRAFTSMEN METAL CORPORATION,** 2815-17-19 Wabash Ave., Calumet 30, Chicago.

**F. Allen Auto Supply Co.**  
1610 Michigan Avenue, Chicago, Illinois  
**Our 1916 Catalogue Ready**

**SALESMAN WANTED, ONE WITH** car preferred, to demonstrate and sell automobile accessories. **SALES MANAGER,** 650 Woodward Ave., Detroit, Mich.

**Automobile Cylinders Rebores**  
**STERLING ENGINE CO.**  
331 S. Clinton St. Chicago

## Don't Buy a New Speedometer Shaft We Repair Them as Good as New

Guaranteed not to pull apart or break. No solder used. Seamless Steel Ferule. Patent applied for.

Parts and repairs for most any Speedometer, Shafts, Swivel Joints, Wheel Gears, Clamps and Pinions.

### Speedometer Repair Co.

1303 W. Jackson Boulevard  
CHICAGO, ILL.

## AUTO CAPE TOP CO.

Seat Covers. One-Man Top.

Victoria Tops. Painting.

Woodwork. : : ✓ : : :

Liberal Commission  
to Garage Owners

Calumet 5660

2335-6-8 Michigan Ave.,  
Chicago, Ill.

## ENGINES—A LARGE STOCK SAVING OF 50% TO 75%

50 H. P. Marine Engine, \$100; 30 H. P. Cadillac Engine, \$75; 35 H. P. Continental, \$75; 35 H. P. Wisconsin Engine, \$100; 3 Cyl. Chass 30 H. P. A. C. Bosch Magneto, \$65.

### MOTOR BOAT

Timkin Axles, Transmissions, Low and High Tension Magneto, and many other parts, at great savings, while they last. Order now before they are gone. Give description of parts wanted.

### ROBERTSON,

1255 North Clark St., Chicago, Ill.

**FOR SALE—GARAGE IN OKLAHOMA** City doing good business; good location; cheap rent with optional lease. Ill health reason for selling. For particulars write A. Y., this office.

## "DON'T SCRAP ALUMINUM PARTS.

Save them with SO-LUMINUM, new, great welding compound; ½ time and cost of acetylene. No flux—use gasoline torch. **TRIAL BAR WITH FULL DIRECTIONS** 50c. **SO-LUMINUM MFG. CO.,** 1790 BROADWAY, N. Y., Booklet 8. **So-Luminum Repair Shops,** 126 Nassau St., Brooklyn, N. Y."

## For Cleaning Engines and Machinery

## THE Economy Motor Blower

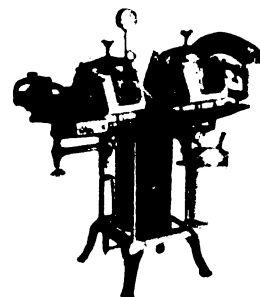
## AND COMBINATION BLOW TORCH

is a Necessity

Does the work in one-third the time, at one-fourth the cost, and does it better than the old way.

Manufactured by

**Daniels Mfg. Co.**  
Atchison, Kan.



## Radium Steam Vulcanizer

Best on Earth. Write for Prices.

Manufactured by

**MILWAUKEE AUTO SPECIALTY CO.**  
705-711 Chestnut St. MILWAUKEE, WIS.

**W(RIGHT) RADIATORS HAVE** stood the test of years. Most durable and efficient. Get the best at less cost than others. Don't order until you send for our prices and illustration of construction. Liberal discount to garages. **Wright Cooler Hood Mfg. Co.,** Chicago.

**THIS DEPARTMENT IS "THE CONTACT POINT" FOR BUYERS AND SELLERS OF AUTO PARTS, MATERIALS AND ACCESSORIES**

# A New A. A. G. O. Department

OF GREAT IMPORTANCE TO THE WHOLE  
AUTOMOBILE INDUSTRY HAS BEEN OPENED

## A Bureau of Registration for Automobile Workers

WITH AN EMPLOYMENT BUREAU IN CONNECTION THAT WILL EN-  
DEAVOR TO FURNISH EMPLOYMENT FOR REGISTERED MEMBERS  
WHENEVER AND WHEREVER DESIRED — NO LIMIT

**T**HIS Bureau will undertake to foster a far more beneficent influence than a mere union of workers would be able to do, inasmuch as a whole-hearted effort will be made to adjust amicably any unsatisfactory wage or working conditions which may arise between employer and employe members. All feeling of antagonism between the two classes will thus be eliminated and the spirit of co-operation, which is the key-note to decent working conditions, will take its place.

This Bureau, like all other departments of this Association, will not be operated for profit, and should a surplus (from the small fee and dues) accrue over and above operating expenses, it will be used to create new benefits to members. But, aside from this possibility, there are sufficient ever-ready and available benefits to cause every automobile worker, of whatever class, in America, to unhesitatingly apply for registration.

When a card has been issued by this Bureau, the bearer will possess a very high recommendation, and he will know that there is a big and influential organization with a real, live and tangible interest in his welfare behind him, and he can feel secure in the knowledge that a position will be obtained for him, if possible, where he wants it and under the conditions he desires. The dominating motive governing this Bureau will ever be unselfish, thoughtful service.

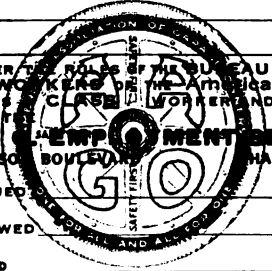
*All workers under the following classifications are eligible to apply for registration:*

Class A Machinists    Class E Nightman or  
Class B Helper                      Washer  
Class C Apprentice    Class F Driver or  
Class D Office Help                      Chauffeur

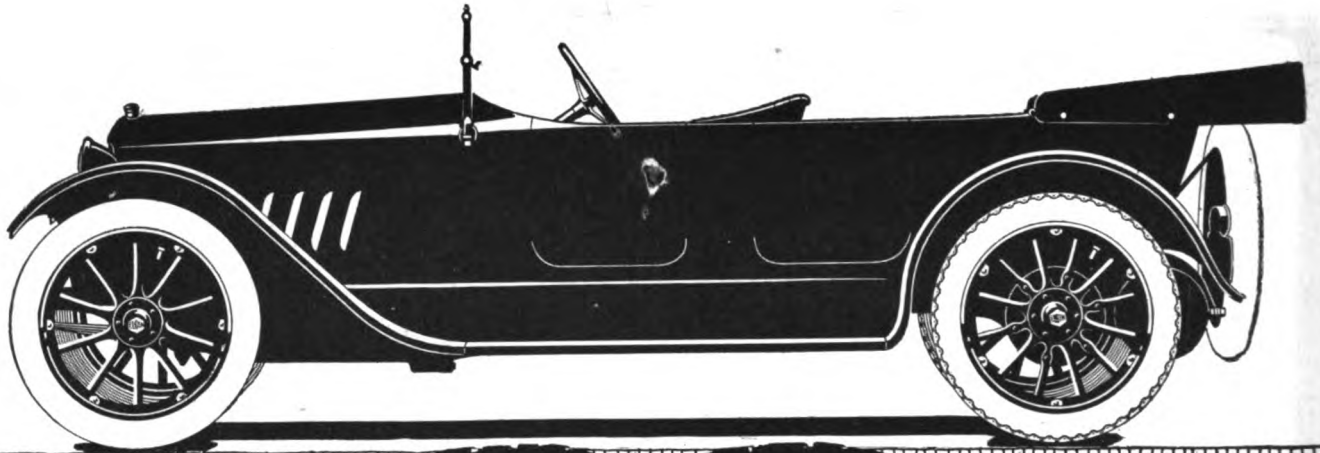
UPON ACCEPTANCE A REGISTRATION  
CARD LIKE THIS WILL BE ISSUED

Workers in this industry will consult their own best interests by applying for registration in this Bureau without delay. Write for application blanks.

**BUREAU of REGISTRATION of AUTOMOBILE WORKERS**  
53 West Jackson Blvd., CHICAGO, ILL.

<b>The Bearer</b>		No. _____
ADDRESS _____		
HAS QUALIFIED UNDER THE RULES OF THE BUREAU OF REGISTRATION OF AUTOMOBILE WORKERS OF THE AMERICAN ASSOCIATION OF GARAGE OWNERS AS A CLASS _____ WORKER AND IS A MEMBER, IN GOOD STANDING, OF THE _____		
		
<b>A. A. G. O. EMPLOYMENT SERVICE</b> 53 WEST JACKSON BOULEVARD    CHICAGO, ILL.    HARRISON 8160		
THIS CARD WAS ISSUED TO _____		1916.
AND MUST BE RENEWED _____		191 _____
SIGNED _____		Secretary
BUREAU OF REGISTRATION OF AUTOMOBILE WORKERS		





## Elgin Character



The **Elgin Six** is a car of refinement and distinction. It is characterized by the dependability and easy-riding qualities found only in cars of much higher price.

Big, beautiful, powerful, yet strictly a "Light Six," with mechanical construction of the highest standard, from the powerful six-cylinder valve-in-head motor to the smallest detail.

In size, appearance and mechanical qualities the **Elgin Six** leads the field in its price class, embodying style and values found only in other cars selling from \$200 to \$400 higher.

There are so many big special selling features in the **Elgin Six** that Elgin Dealers keep the wires hot calling for "More Elgins." Some desirable territory open for dependable dealers. Write or wire.

### —These Special Features Make Elgin Sales Easy—

Six-Cylinder Valve-in-head 35 horsepower Motor.

Unit Power Plant, Three-Point Suspension.

V-Type Radiator, Thermo-Syphon Cooling. Combination Force Feed and Splash Lubrication.

Two-Unit Dyneto Electric Starting and Lighting System.

Delco Ignition System.

Stewart Vacuum Feed, Rayfield Carburetor. Springs, Semi-Elliptic Front, Self-Oiling Cantilever Rear.

Multiple Disc, Dry Plate Clutch—Steel on Raybestos.

One Man Top—Jiffy Curtains.

Quick Detachable and Demountable Rims.

114-inch Wheel Base.

**Elgin Motor Car Corporation**  
Chicago, U. S. A.

**Five-Passenger Touring**  
**\$845**

**\$845**

**Clover Leaf Roadster**  
**\$845**

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**FREE INTRODUCTORY OFFER ON****JOHNSON'S CARBON REMOVER**

**O**UR new preparation—Johnson's Carbon Remover—is ready for the market. We have made exhaustive tests under all conditions and pronounce it "Perfect"—which it must be before it can go out under the name of "Johnson".

If you will sign and mail us the coupon—we will send you a **pint free by prepaid express**—this is enough for thoroughly cleaning the carbon from a six cylinder car.

**UNCONDITIONALLY GUARANTEED**

We guarantee the article and sale of Johnson's Carbon Remover without equivocation. It is absolutely fool-proof—no matter how much you use and how you use it—Johnson's Carbon Remover cannot injure any part of the motor. You could soak an engine in it for days without the slightest injury.

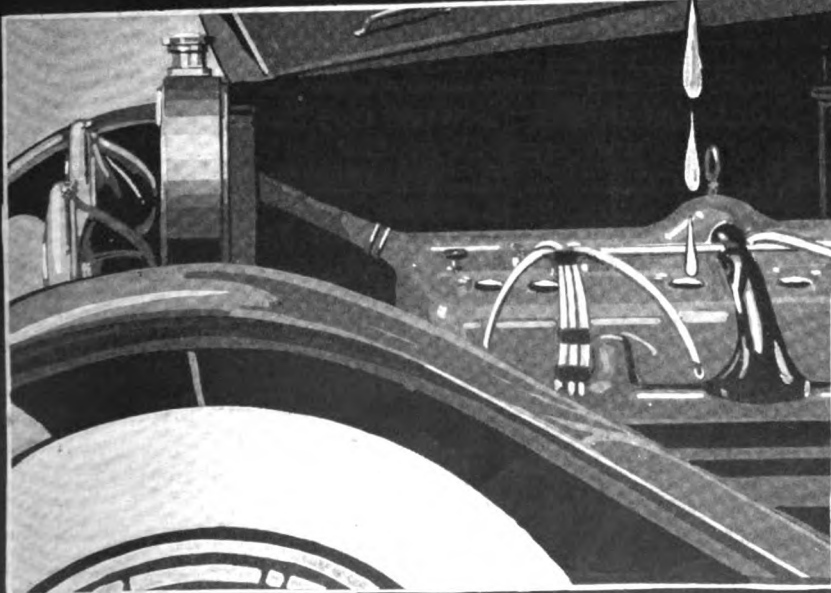
**NO EQUIPMENT EXPENSE**

You don't have to buy anything except Johnson's Carbon Remover to remove carbon—not even an oil pump is necessary—so why pay from \$5.00 to \$25.00 for carbon removing equipment.

No matter how choked up a motor may be—Johnson's Carbon Remover penetrates, and softens the carbon so that it blows out as the car is operated. It isn't necessary to lay up your customers' cars for removing the carbon—simply pour in Johnson's Carbon Remover and blow it out at your convenience—any time after 2 hours—you may leave it in all night if more convenient.

**WILL BE NATIONALLY ADVERTISED**

Johnson's Carbon Remover will be very extensively advertised in the leading motor papers, magazines and weeklies. There is bound to be a large demand for it. We want you to know about this wonderful new product so you can recommend it to your customers—either doing it for them or selling them the material to use themselves—either way there is money in it for you.



S. C. JOHNSON & SON, Racine, Wis. AG10

Please send me a pint of Johnson's Carbon Remover free by prepaid express. I agree to try it and report results just as I find them. If your Carbon Remover gives as good results as you claim I shall consider the matter of stocking.

Name.....

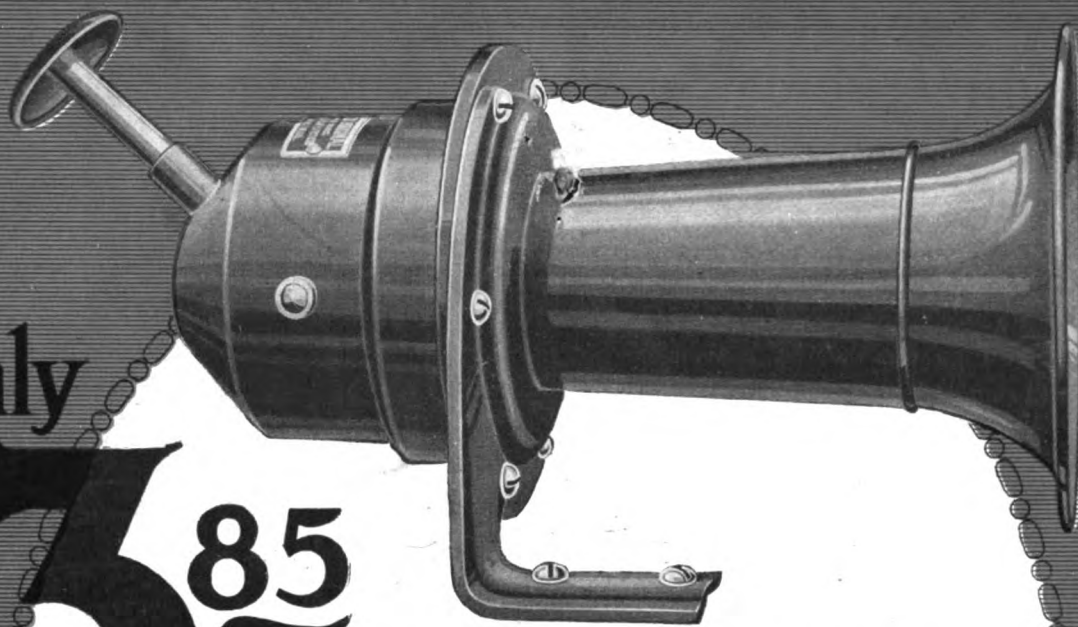
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Only  
\$ **3.85**



## Here Is the Hand Auto Horn You've Been Waiting For

*You can pay more than is asked for a Garford Hand Auto Horn, but you cannot buy more dependable warning signal service no matter what you pay.*

The Garford Hand Auto Horn is standard equipment on a number of the most popular makes of cars on the market—it should have been part of your equipment. The very name Garford means quality and service—the one warning signal that will inspire absolute confidence. Tone distinctly different from all others and raises above the ordinary traffic sounds, and carries long distance ahead in plenty of time to clear the road.

The plunger placed at an angle of 45 degrees, responds with absolute certainty to the slightest touch so that you can modulate the volume of tone to the urgency of your need.

No gears or ratchets to collect dirt and clog. No batteries, push buttons, wires, etc., to bother with. Handsomely finished in baked black enamel—but that's not all—it's always on the job. Priced within the reach of all—so why pay more—when

## The Garford Hand Warning Signal Is Guaranteed For the Life of Your Car

### The Garford Rexo II Hammer Driven Auto Horn

The loudest signal of its kind on the market. Compact in design—highest electrical efficiency—striker ground absolutely true to diaphragm after assembling. Push button constructed so that slightest pressure at any point assures perfect contact. Attached to steering wheel. Storage battery or dry cells runs entire season without attention. Simple and easy to operate. Handsomely finished with two coats of baked black enamel, with highly polished nickel bell. At its price, sold under our unlimited guarantee, it is undoubtedly the best Auto Horn buy of the season. Price, only.....

**\$3.85**

### Garford Electric Motor Auto Horn

Can be heard further than an object can be seen on a country road. Sound is not objectionable to occupants of car because horn throws it way ahead. Simple and easy to operate—signal positive, certain, dependable giving maximum warning service on minimum current consumption. Unusual accessibility enables owner without mechanical knowledge to keep it in perfect condition. Will not work loose nor will its brackets mar the car. Dry cells or storage battery. Can be mounted in several positions. Finished in two coats of baked black enamel satin finish. Unlimited guarantee.

**\$7.00**

### Garford Ford Type Speedometer

Its absolute accuracy and permanence are guaranteed by its extremely simple speed indicating mechanism which is purely mechanical in action. Powerful action, hand moves over dial without a quiver. Reflection-proof dial easy to read. Hand pointing horizontally to left indicates 10 miles an hour; 45 degrees to left, 20 miles; vertically, 30 miles, etc. Sold under strongest guarantee ever made. Any defective part repaired or replaced free. One size 3 1/4 in. in diameter complete with all fittings for attaching to car. Finished in black enamel with nickel trimmings.

**\$11.50**

Also manufacturers of Garford Flush and Bracket Types Speedometer;  
Garford Dynamo Lighting System; Maxo II Electric Horn for Motor Cycles.

## Garford Auto Accessories Best Buy of the Season

See them at dealers' or write for booklet

**To Dealers:** Now is the time to get in line for your share of the auto accessory prosperity these thoroughbreds will produce for you.

THE GARFORD MFG. CO., Dept. 509 Elyria, O.



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# AMERICAN GARAGE AND AUTO DEALER

OFFICIAL PUBLICATION OF THE A.A.G.O.



VOLUME 2  
NUMBER 5

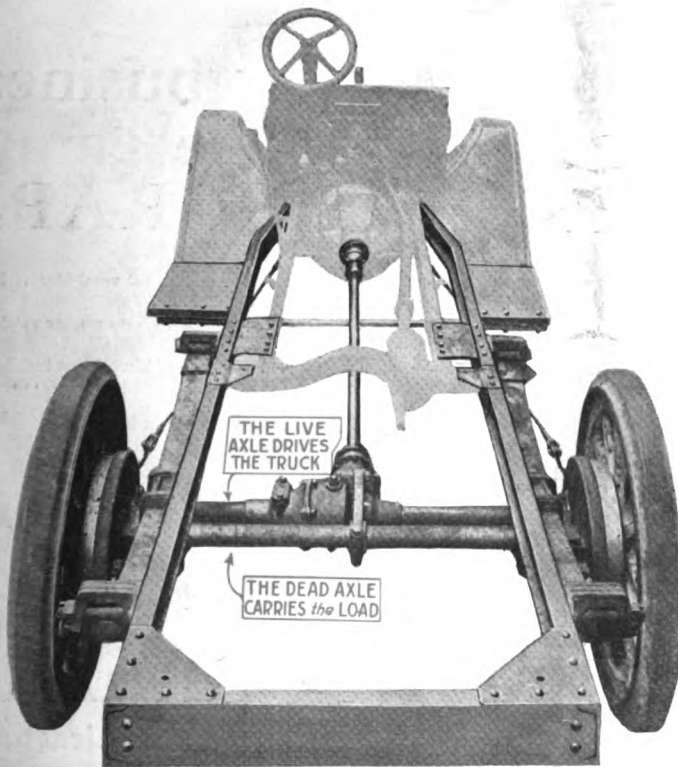
CHICAGO

OCTOBER, 1916

17-20-16  
Year

## Russel

### Internal Gear Drive Axles



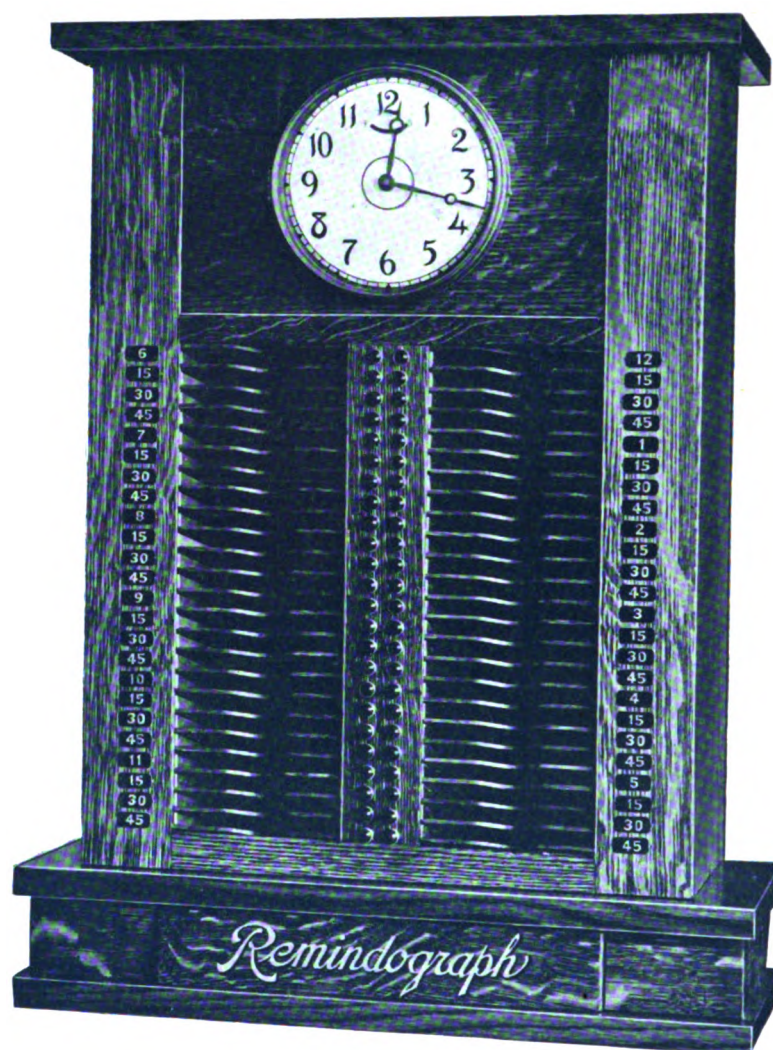
Are like the Chain Drive without its disadvantages of noise and clogging up is the chains with mud and dirt, and of ninety-two per cent efficient at all speeds.

The Internal Gears which take the place of the easily broken chain will outlast the working parts of the truck.

No heavy, bulky, housing to limit the ground clearance and to increase the unsprung weight of the tires.

Any mechanic can readily install it and if it should be damaged he can repair it at his garage, whereas other types of shaft drive axles have to be sent back to the factory for the minute adjustment of their intricate parts

**Russel Motor Axle Co.**  
North Detroit



## I am a valuable asset to any business and **INDISPENSABLE** to the garage man—I am the **REMINDOGRAPH**

I relieve you of the burden of remembering things to be done at some future hour of day or night.

Write all your daily appointments or whatever is to be recalled at some later time on cards, insert each card in opening indicating the time of day or night and I will automatically do the rest.

When the time for each call arrives, my electric lights and buzzer will call your attention until the proper reminder card is removed. When I am used in a noisy place (like a garage where some one at a considerable distance has to be reminded), wires are run from me to an electric gong in any desired part of the place.

I can tell you the when, where and what about calling for and delivering cars, or calling for passengers. The human memory sometimes plays strange tricks, but I never forget. A mind that is busy with many duties is liable to forget once in a while.

"I forgot" is an excuse used since time began, but has never corrected an error in which timeliness was a factor.

"I forgot" has disgruntled and lost many a good customer.

"I forgot" can be entirely eliminated from your vocabulary. I never forget.

I have no springs, levers, triggers, switches, plugs or other mechanism for you to manipulate. I am automatic.

I am manufactured of the best materials. My cabinet is finished in golden oak. I am a thing of beauty as well as efficiency, reliability and economy.

As an accurate timepiece, I am worth all that is asked.

It costs less than \$1.00 a year to run me.

WHATEVER else you want to know, write and ask my makers. Space here is too small to tell about all of my good points and advantages.

I am "safety first" where the integrity of business demands punctuality as in a garage.

You need me and need me badly.

Price f. o. b. Chicago, complete  
with golden oak cabinet - **\$50.00**

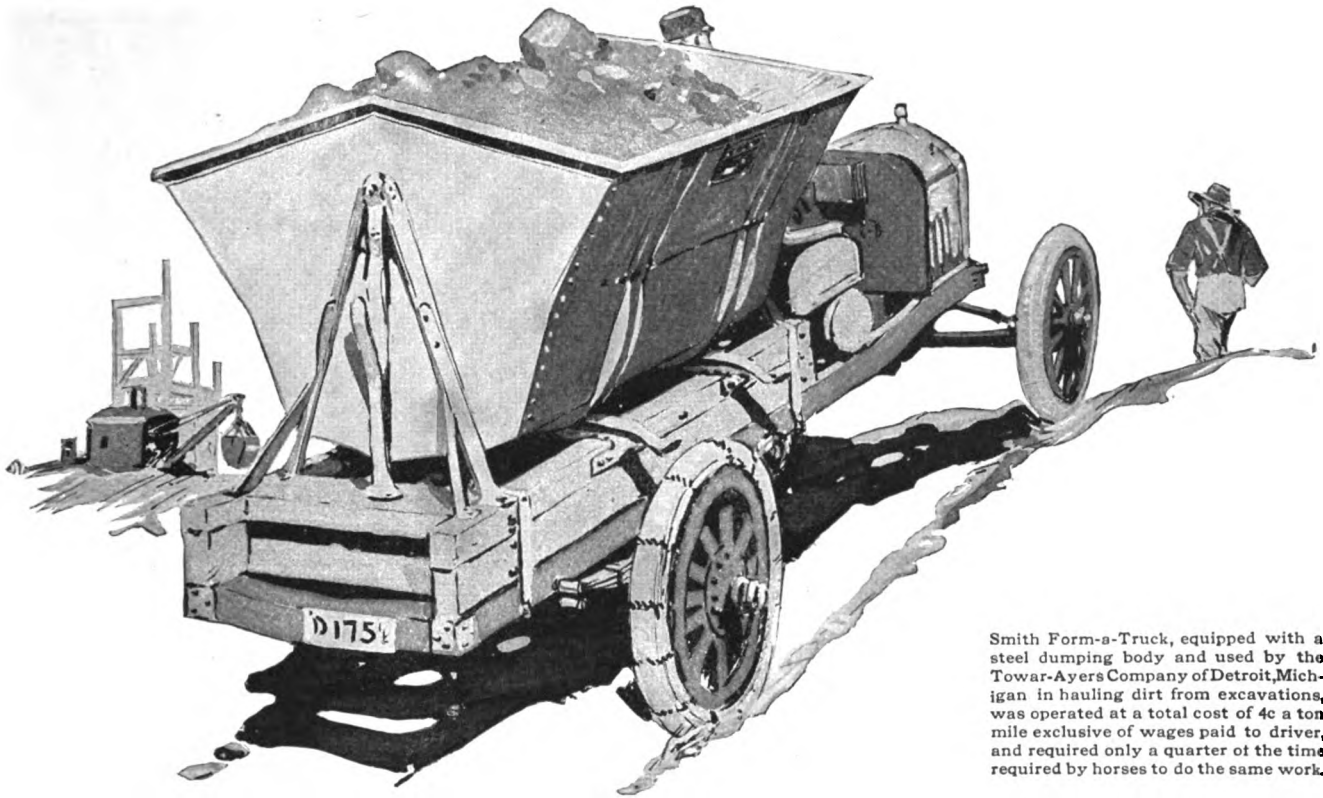
## AUTOMATIC REMINDOGRAPH

Sales representatives wanted in every  
town and city in the U. S. and Canada

Suite 209-210, 431 S. Dearborn St., Chicago, Ill.

Patronize our advertisers and build up your Association and Journal





Smith Form-a-Truck, equipped with a steel dumping body and used by the Towar-Ayers Company of Detroit, Michigan in hauling dirt from excavations, was operated at a total cost of 4c a ton mile exclusive of wages paid to driver, and required only a quarter of the time required by horses to do the same work.

## The Lowest Hauling Cost in the World

# Smith Form-a-Truck

## \$350

F. O. B. Chicago

The first Smith Form-a-Truck attachment was sold in Sumner, Washington, four years ago. This Smith Form-a-Truck has already run 18,000 miles at a total cost for repairs of \$8. The average load hauled has been 2200 pounds and the Smith Form-a-Truck has been in service every working day.

Now Smith Form-a-Trucks are being bought in fleets, ranging from twenty or thirty up to two hundred by many of the largest concerns in the country.

The Smith Form-a-Truck attachment, combining as it does with any Ford or Maxwell power plant to make a fully guaranteed one-ton truck, has definitely established the value and service standard in the one-ton field.

Its acceptance by general business as the standard vehicle in service in which the loads average from 2,000 to 4,000 lbs. is shown by the fact that contracts for Smith Form-a-Trucks already total nearly 40% of the total production of trucks, all makes, for this year.

In every community the Smith Form-a-Truck dealer is a leader—the man doing the biggest and most successful business.

### *Smith Form-a-Truck Co.*

Executive Offices and Salesrooms, Suite 984 Smith Form-a-Truck Bldg.  
1470 South Michigan Avenue, Chicago, Illinois

**Eastern Branch**  
1834 Broadway, New York

**Pacific Coast Branch**  
Pico and Hill Streets, Los Angeles

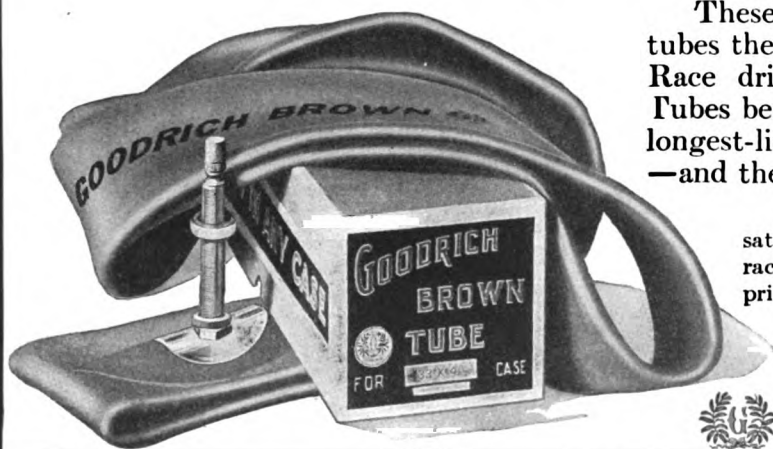
**Southern Branch**  
120 Marietta Street, Atlanta

Patronize our advertisers and build up your Association and Journal

## Follow the lead of the race drivers

Men who send cars hurtling around race tracks at 100 miles an hour can't risk their lives, the purse or their cars on inner tubes. They demand the best money can buy! It is interesting to note that almost without exception such men as Resta, DePalma, Rickenbacher and all the other race drivers of note use

# GOODRICH Brown Inner Tubes



These men don't guess! They *know*! The tubes they buy must be able to stand the gaff. Race drivers have chosen Goodrich Brown Tubes because they are the huskiest, toughest, longest-lived tubes that have ever been made—and they know it.

Goodrich Brown Tubes will give as much satisfaction to your customers as they have given race drivers. If you haven't a stock now, get prices from your nearest Goodrich Branch.

**The B. F. Goodrich Company**

Factories: AKRON, OHIO

Makers of the Celebrated Goodrich Automobile Tires—  
"Best in the Long Run"



## R & M PISTONS and RINGS

*Are Without a Parallel!*



### R & M CONFORM

— "The Mechanically Right" piston rings with proven qualities and guaranteed satisfaction.

### R & M MALUMINUM

— "The True Light Weight" piston. Strength and durability greater than cast iron. Weight reduced

from 50 to 75%. Vibration practically eliminated. Increased acceleration. The combination of R & M Pistons and Rings are an INVESTMENT and not an EXPENSE.

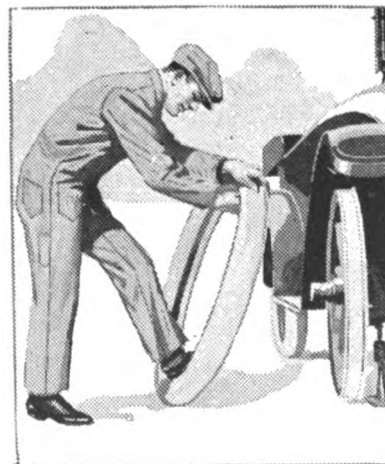
*Wire or write for Dealers' Proposition*

**Modern Electric & Machine Company**  
936-940 Ft. Wayne Ave., Indianapolis, Indiana

## Clothes Safe from Grease and Dust

No need now to ruin your clothes with odd jobs on your motor car. Protect your clothes—from head to foot—with a

**Shanhouse  
MOTOR SUIT**



One-piece over-garment for every use.

Put it on in a minute. Take it off in a second. Keep it always in your tool box, handy for instant use. Made of olive khaki to go on over all your clothes—comfortable, durable, practical and washable. Costs but \$2.

Don't change your clothes every time you change your tires, clean or grease your car. Save big bills at the cleaners.

If your dealer cannot supply you, send \$2.00 giving chest measure and dealer's name. We will send you one direct, prepaid. Money back if not satisfied. (5)

**W. SHANHOUSE & SONS**  
Dept. 105 ROCKFORD, ILL.

Patronize our advertisers and build up your Association and Journal!

# AMERICAN GARAGE AND AUTO DEALER

FOR THE GARAGE-OWNER, AUTO-REPAIRMAN AND AUTO-DEALER

PUBLISHED  
The AMERICAN ASSOCIATION

In which has  
Garage Efficiency and



MONTHLY BY  
GARAGE OWNERS

been Incorporated  
Retail Motor Trade Journal

Vol. VII. No. 5

New York—CHICAGO—Detroit

October, 1916

CHAS. M. CARR, Editor and Manager  
IRWIN D. GROAK, Technical Editor

CHAS. C. BOMBAUGH, Law Editor  
J. R. HASTIE, Advertising Manager

Entered as second-class matter, March 1, 1916, at the Post Office at Chicago, Illinois, under the Act of March 3, 1879.

Subscription Per Annum (Postage Paid) \$1.00. Advertising Rates on Request.

## THE AMERICAN ASSOCIATION OF GARAGE OWNERS, INC.

A corporation not for profit organized under the laws of Illinois.

General Headquarters, Chicago, Ill., 537 S. Dearborn Street, Telephone Har. 8160.

New York Office: 30 East Forty-second Street. F. L. Hadley, Manager.

Detroit Office: 901-902 Kresge Building. Robert M. Smith, Manager.

### Objects of the Association

Section 1. To carry into effect, in the operation of the business of our members, the idea embodied in the slogan, "Safety First," in order that membership in the association will insure to the public that quality in service in repair work and service identical with the highest safety and values.

Sec. 2. To devise ways and means of establishing standards of safety and values that will be in harmony with the cost thereof, and of lowering costs to members and patrons.

Sec. 3. To act together through the general headquarters of the association in such practical ways as to create an adequate standard of profits for members, consistent with the capital employed by them and the service rendered to patrons.

Sec. 4. To promote by every means in our power measures and legislation which will give to our members the same legal protection which is now enjoyed by the building material trades, hotelkeepers and others catering to the public in like manner.

Sec. 5. To unite individual garage owners and associations of garage owners in a central body for the improvement of business as repair men, livery men, and dealers.

Sec. 6. To cooperate with other organizations having similar aims.

Sec. 7. To secure and disseminate to persons and members identified with this association all legal and other proper information which may be of value to them in the prosecution of their business as public garage owners.

Sec. 8. To publish such magazines, periodicals, bulletins, etc., as may be required from time to time for the purpose of supplying vehicles for the dissemination of such information as referred to in the preceding section.

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### The A. A. G. O. Mottoes:

"To Live and Let Live."  
"One for All and All for One."

Applied for membership in the  
AUDIT BUREAU OF CIRCULATIONS.  
Circulation for this issue 14,200 copies guaranteed!

# The A. A. G. O. in Action



SECRETARY-TREASURER'S OFFICE, From Which All of the Association's Activities Are Supervised and Directed; Mr. Carr at His Desk—3. ORGANIZATION DEPARTMENT, in Charge of a Force of Forty Field Workers; Director Marcher—5. MEMBERSHIP AND OFFICIAL JOURNAL SUBSCRIPTION DEPARTMENT, Showing Miss Hamilton and Assistants—4. LEGAL DEPARTMENT and General Attorney C. C. Bombaugh—6. MECHANICAL DEPARTMENT and Engineer I. D. Groak—7. INSURANCE DEPARTMENT and Commissioner White—8. PUBLICITY AND JOURNAL ADVERTISING DEPARTMENT, Manager Hastie and One of His Assistants—1. COLLECTION DEPARTMENT and Miss Rinello—2.



# AMERICAN GARAGE AND AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE, GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. VII. No. 5

New York — CHICAGO — Detroit

October, 1916

## Every Garageman and Auto Dealer Needs It

**T**HE American Association of Garage Owners has developed a construal life that connects so vitally and helpfully with that of the garageman, auto repairer and auto dealer and his activities that he cannot afford to hold aloof or fail to make available to himself his share of the benefits.

Like all organizations, the A. A. G. O. had to have a beginning. Like all associations of merit, it has been blessed with continuous growth. But, unlike many of the now solid, substantial trade organizations, it has made progress so rapid and substantially as to almost challenge belief. In point of numerical strength and administrative efficiency, your secretary and his associate officers and helpers may well "point with pride" and rejoice with the members and beneficiaries over the achievements so quickly won.

A Legal Department has been created, through which members may be advised by letter or wire on all questions of law and legal procedure affecting their business, free.

An Engineering and Mechanical Department has been established from which shop information of the most expert character can be obtained by letter or wire at any time, free.

A Collection Service has been installed by means of which many of the hopelessly bad accounts of members are being turned into cash, at a nominal cost for postage and stationery. Over \$200,000 of worthless accounts have been collected by this service since it was organized in the N. A. R. D. eight years ago.

An Insurance Department has been organized, enabling members to secure the benefit of the inter-insurance principle of fire and casualty protection. It will save members from 10 to 500 times the amount of their A. A. G. O. dues the first year, and more in

after years. The Department is NOW ready to write business. Write us at once.

A Bureau of Registration for Automobile Employees has been established for the purpose of standardizing and classifying employees and issuing cards to the various classes, and to efficient and worthy persons only.

A Rapid-Fire Employment Service has been installed in connection with the above-named Bureau. It constitutes a conscientious effort on the part of the Association to aid in solving the irritating and now almost hopeless help problem.

A "Dead Beat" and Fraud Register has been issued and material for it is being gathered from month to month and put into convenient form for preserving, properly indexed, for future reference. The protective value of this register to members in dollars and cents has already been established.

Standardization of Tourist Prices for the double purpose of directing this large and growing patronage to A. A. G. O. garages, repair shops and supply stations and protecting the motoring public against extortion, is an accomplished fact.

Our Publicity Department's work has made the New Jersey Lien Law an almost "household word" in the trade throughout

the country and paved the way for legislation of greatest importance to our members. The big Gasoline Price Reduction Fight has been inaugurated—and yet the A. A. G. O. in its present form is little more than one year old.

Can you wonder that this association has enthusiastic friends and boosters? Men and women glory in it; and children love it, as the illustration in the center of this page so beautifully suggests.

Boosters—Garageman, Repairer, Dealer—these benefits are for you. All of them. You have only to ask for the services the A. A. G. O. is so gladly rendering those of its members who are zealously and actively co-operating with it in order to receive them. Why not ask now?



*C. M. Carr*

Secretary-Editor



# The Editorial Point of View

## OCTOBER, CALM AND CHEERFUL

October morn wears clothes, you know;  
September morn, not any;  
This glorious month of calm and cheer,  
Its weather not hot nor chilly.  
A month what not or whereunto  
The tides of business flowing,  
Hints at that which next year will do,  
In the way of fortunes sowing.

Down the  
steep in-  
cline the  
laggard goes,  
With brake and clutch neglected;  
and toes,  
fort, with heels  
hill of ef-  
Up the  
A-scratching and a-tugging,  
All thought of ease rejected,  
Mounts the man of power—  
Tank full of gas,  
Spark plugs clean,  
Carburetor efficient,  
Steering gear true,  
Differentials exactly right,  
Tires sound and well inflated,  
And by these tokens becomes he  
The hero of the hour!

## Annual Meeting and Convention

**U**NDER the Constitution and By-Laws of the A. A. G. O., the 1916 annual meeting will be held on the last Tuesday in November. At that time the Executive Members will meet at the National headquarters for the transaction of business, which will include the election of officers.

The convention will be held later, probably during the Chicago Auto Show when the largest number of the active members of the Association and the garage and auto dealer craft of the country will be assembled in one locality at one time during the entire year.

It is desired of the A. A. G. O. leaders that this convention shall be **THE GREATEST GET-TOGETHER EVENT** ever pulled off in the garage and retail auto industry. The program will be arranged with the greatest care from the standpoint of making available to the members and visitors present the largest amount of useful information — mechanical, commercial, association, legislative, protective.

Besides, we are going to give you **A GOOD TIME**. Brothers, pencil

this down in your memorandum book and make an effort to be here next January, for a rare treat is in store for you.

The convention announcement will appear in our next number.

## Beware of Pirates and Substitutors

**T**HE pirate and substitutor is abroad in the land. He has not overlooked the automobile and garage trade. The smooth faker who desires to reap where others sow, whose success depends upon trading successfully on the reputation others have built, is the man who serves himself only and gets everybody else in trouble who deals with him.

The pirate car part is usually a substitute for a standard part. It stands to reason that the pirate-maker cannot produce as cheaply and as well as the original maker, yet he sells at a lower price. The conclusion is obvious.

**NO HONEST GARAGE MAN OR REPAIR SHOP MAN IS GOING TO BE USED AS A TOOL BY THESE PIRATES AND SUBSTITUTORS.** He can't afford to be. He has a reputation to sustain or to create.

In another part of this issue will be found an elaborate article dealing with this great evil. Read it carefully and take its lesson home to you.

No reader should mistake what we have here said as advice against the garageman selling goods on his own guarantee. Many a car owner prefers the guarantee of his own garageman to the guarantee of any manufacturer. Here again we want to sound a note of caution: Never put your guarantee behind any product that you have not thoroughly tested out and are willing to stake your reputation, honor and business capital on when making the guaranty.

## "Garagemen and Dealers"

**T**HERE are garagemen and dealers, but there are more garagemen who are dealers and dealers who are garagemen than there are of each class.

When we speak of "garagemen and dealers" editorially or in the Association literature, we have in mind largely the composite garageman-dealer, although we do not exclude from our thought and its application the garageman who is not a dealer nor the dealer who is not a garageman.

Primarily this journal and the A. A. G. O. stand for **THE GARAGE AS A DEPARTMENT STORE OF MERCHANDISE AND SERVICE FOR THE AUTO OWNER**. Our constructive efforts in behalf of the trade will be made largely along this line, although we are broad enough to recognize the fact that specialization has taken place and will continue to take place in this field of work.

The specialist is a part of the whole, and we are sure he will not make faces at his all-around service and dealer brother. Rather should he cultivate him and work in harmony with him.

The American garage is one of our new institutions, and its development has wonderful possibilities. The vision we have of the garage as a department store of service and merchandise is one we believe will appeal largest to the average American business man whose activities lie within the garage and auto retail field. Auto dealers are live wires; so are repair shop owners, welding concerns, etc., but the all-around institution is the one communities for the most part will have to depend upon.

Manufacturers want dealer distribution, and in our field that means garage distribution, because no element in the retail distributing field is more closely associated

and in keener sympathy with car owners than the garageman. Every garageman is or should be a merchant as well as service man. His opportunities for selling goods, from a limousine car to the smallest accessory, are wonderful. It is a part of his business that easily lends itself to volume and profits, and no garage is anywhere near complete without it.

### A. A. G. O. Washington Headquarters

THE American Association of Garage Owners has opened a National Legislative and News Headquarters at 1108 Woodward building, Washington, D. C., with W. E. Pullman as the Association's official representative. The A. A. G. O. and the "American Garage and Auto Dealer" will, from now on, be in constant touch with congressional and departmental affairs at the Nation's capital.

There will be big things doing of interest to the garage and automobile trade when Congress reconvenes in December. The fight for lower gasoline prices is developing very rapidly and, with the assistance of every member of the A. A. G. O., we can make a splendid showing by that time. National Headquarters and Mr. Pullman will keep steadily on the job, and nothing can prevent this organization from letting Congress and departmental officials at Washington know, in a most emphatic manner, that we have a grievance and intend to have it properly disposed of or know the reason why.

Members of the Association desiring any information that the Federal Government can supply, have only to ask National Headquarters for it and it will be obtained for them.

The opening of a Legislative and News Headquarters in Washington, D. C., is but another step in the direction of greater efficiency on the part of the A. A. G. O. in serving its members and the trade.

### Built for Service

THE American Association of Garage Owners is built for service. It is not a debating society. It is not a political machine. It is A SERVICE ORGANIZATION.

The Constitution and By-Laws of this organization have been so framed as to eliminate as largely as possible waste motion, disunion, agitation and discussion that will encourage factionalism, and advisory votes will be taken from time to time upon all important questions. The executive and governing authority has been centralized, quite largely in the hands of its founders, in order that ADMINISTRATIVE ACTION MAY BE EFFICIENT.

When the Association takes in a member it enters into a solemn compact with him to deliver certain specific results. The Association, therefore, must not be hampered or subjected to diverting and disturbing cross-fire that will limit its ability to make good.

The educational work of the organization will be pushed with vigor and its activities will be ceaselessly carried on. Every Bureau or Department of the organization will be conducted from the standpoint of A BUSINESS CORPORATION WHICH SELLS SERVICE AT A PRICE AND HOPES TO RESELL THAT SERVICE YEAR AFTER YEAR TO SATISFIED CUSTOMERS.

The A. A. G. O. has been giving big values for \$2.00 a year to its members. These values have been CONSTANTLY INCREASED. In another year they may be so extended that THE PRICE WILL BE ADVANCED. The A. A. G. O. at \$5.00 a year would be cheap now, and it will be cheaper when the dues are advanced to that figure, because the service will be bigger and better then.

We want to emphasize this slogan, "THE A. A. G. O. IS BUILT FOR SERVICE." Its only excuse for existence is to SERVE its members. Its chief executive officer has twelve years' experience

back of him in handling Association affairs and he knows WHAT WILL PRODUCE FOR THE MEMBER and what will not. If he is given your sympathetic and hearty support, he is satisfied that with the start already obtained THE A. A. G. O. CAN BE MADE THE MOST EFFICIENT AND USEFUL ORGANIZATION OF A TRADE CHARACTER IN THE WORLD.

Are you "wid us"?

### Standardization of Tourist Repair and Storage Prices

THE following standard of maximum prices for tourist repairs was adopted by the A. A. G. O. on the recommendation of the National Advisory Board:

	Towns	
	Over 10,000	Under 10,000
Machinist (Class A).....	\$1.00	\$0.75
Helper (Class B).....	.80	.50
Apprentice (Class C).....	.40	.30
Tourist } per day.....	1.00	.80
Storage } per week.....	5.00	3.00

Immediately on receipt of the verdict of the Advisory Board and Association, the Secretary notified the 853 motor and automobile clubs of the country of this action and supplied them with a neat poster announcement in two colors, to be posted on the bulletin board in each clubhouse or clubroom.

The action of our Association for the protection of motor tourists against the rapacity and hoggishness of garagemen who are a disgrace to our craft has met with hearty commendation, and many of the club secretaries and presidents have advised A. A. G. O. Headquarters that they would give this good work of ours the widest possible publicity in their club printed matter and the news items given out by them to the daily and monthly press.

While the effect of this standardization campaign will be to SEND TOURIST TRADE TO A. A. G. O. GARAGES, it also serves the important purpose of indicating in no unmistakable terms that the reputable, organized garage and retail auto trade DOES NOT INTEND TO REST UNDER THE

**IMPUTATION THAT THEY ARE HIGHWAYMEN** lying in housed ambush along tourist routes bent upon relieving tourists of all they have, merely because a few of that sort of criminals have gotten into the garage business.

As the prices adopted are maximum, **NO EFFORT HAS BEEN MADE TO FIX PRICES** at which A. A. G. O. garages shall deliver service. Many garagemen charge less than the maximum prices quoted. The only purpose was to put on an anti-extortion lid and hold it there.

### Garage Lien Laws

**E**ARLY in 1917 something like forty State Legislatures convene and **A CAMPAIGN TO SECURE ADEQUATE LIEN LAWS** for the protection of garage men will be in order. The campaign should properly begin NOW. In most of the States primary elections have been held and candidates nominated. **THESE CANDIDATES SHOULD BE PLEDGED** in favor of the lien law, and no candidate should be supported by the garage and auto trade interests who does not favor the enactment of this law.

In order to enable our members to bring the matter to the attention of the legislative candidates in their respective districts, we will here set forth the text of the New Jersey Lien Law, which is generally recognized to be the most efficient law of its kind in force anywhere in the United States. It has been thoroughly tested in the courts and found to be invulnerable.

Its text follows:

**Section 1.** Be it enacted by the Senate and General Assembly of the State of New Jersey: All persons or corporations engaged in the business of keeping a garage or place for the storage, maintenance, keeping or repair of motor vehicles and in connection therewith stores, maintaining, keeps or repairs any motor vehicle or furnishes gasoline, accessories or other supplies therefor at the request or with the consent of the owner or his representative, whether such owner be a conditional vendee or a mortgagor remaining in possession or otherwise, has a lien upon such motor vehicle or any part thereof for the sum due for such storing, maintaining, keeping or repairing of such motor vehicle or for furnishing gasoline, accessories or

other supplies therefor, and may without process of law detain such motor vehicle at any time it is lawfully in his possession until such sum is paid.

**Section 2.** Any person or corporation acquiring a lien under the provision of section one of this act shall not lose such lien by reason of allowing the motor vehicle or part or parts of the motor vehicle to be removed from the control of the person or corporation having such a lien, and in case a motor vehicle or part or parts are so removed the person or corporation having such lien may, without further process of law, seize the motor vehicle or part or parts thereof whether the same is or are found within the state of New Jersey.

**Section 3.** All such property so held by any garage keeper or automobile repair man shall, after the expiration of thirty days from the date of such detention, be sold at public auction, upon notice of said sale being first published for the space of two weeks in some newspaper circulating in the city, town, township, borough or other municipality in which said garage keeper or automobile repair shop is situated, also after five days' notice of said sale set up in five of the most public places in said city or township, and the proceeds of said sale shall be applied to the payment of said lien and the expenses of such sale; and the balance, if any remaining, shall be paid to the owner of such property or his representatives; and if said balance is not claimed by said owner within sixty days of said sale, then the balance to be paid over to the overseer of the poor of the said city or township for the support of the poor.

**Section 4.** This act shall take effect immediately.

It is the desire of the A. A. G. O. that State and Local Associations take up this work at once and that individual members of the National body in localities where there are no Local bodies become active. Let there be **NO DIVISION** in the craft, but let **ALL PULL TOGETHER** in the attainment of this great benefit.

In States like Michigan and New Jersey, where the Legislature has already enacted a lien law, it would probably be better to amend the present law, strengthening it along the lines of the New Jersey statute, than to present an entirely new bill. The wisest counsel in these matters should prevail and National Headquarters will be found more than willing to co-operate and support those on the ground in their efforts to improve the law. Let us hear from our Michigan and New York friends—members of the A. A. G. O. and members of the State Associations.

State Associations not well equipped with administrative machinery, by uniting with National Headquarters, can obtain the best

possible service in reaching garagemen and the allied interests of the State when the time is ripe for developing pressure upon the men who pass our laws at the various State Capitols. The question of who shall have credit for passing a lien law or any other law in any of the States can well be deferred until after the needed law is secured. As far as the A. A. G. O. is concerned, it is not so much interested in whether the State or National body shall receive the credit, as it is in obtaining the benefits which the trade so badly need.

Therefore, Brothers, let us **GET ON OUR FIGHTING CLOTHES** without further delay and start the good work among the legislative candidates. When a Senator or Representative pledges himself in favor of the lien law, advise National Headquarters so that he can be given a boost in the November number of the journal, which will appear before the date of the election, and every other character of support we can command. If a candidate is non-committal or frankly opposed to our law, send in that information also. With your help, we can make the November number of the journal a **RED-HOT CAMPAIGN DOCUMENT** that will help elect candidates favorable to our interests and defeat those opposed to giving us our rights.

### The Ferris Oil Leasing Bill

**I**N the last issue of the **AMERICAN GARAGE AND AUTO DEALER** we published a most encouraging and satisfactory interview with Congressman Scott Ferris, author of the Ferris General Leasing Bill, which, if passed by Congress, will throw open to general leasing under rigid restrictions against monopoly, 5,000,000 acres of government oil lands. The automobile industry in particular and the "gas" engine industry in general are very much interested in the success of this bill. It has a very wide bearing, and even effects the government itself, as the Army and Navy of the United States

have recently become large consumers of gasoline.

In correspondence with National Headquarters, a large number of automobile manufacturers have expressed the desire to see the full text of the Ferris General Leasing Bill, and we are glad to present it in this issue of the journal. It will be noticed that the Ferris Bill does not legalize the holding of large bodies of oil land, the title of which is in dispute and not recognized by the government. It also provides against a further development of the oil industry in the hands of the few, but instead encourages a wide

distribution of these lands, in order that the products of petroleum and the manufacture of these products will benefit the largest possible number of enterprising and industrious people, thereby supplementing and making more effective the features of the bill which are intended to safeguard the future of the petroleum trade against monopoly.

In another part of this issue we print the full text of the Ferris Bill and advise our readers to preserve it, as it will be the subject of much discussion when Congress convenes in December.

## State and Local Associations

**W**E believe in the **AUTONOMY** of State and Local Associations. Our experience has been that where national bodies attempt to interfere in the work of local or state bodies, they fail to accomplish anything for themselves or advance the interests of the organizations of smaller jurisdictions.

We feel that when this policy of the A. A. G. O. is thoroughly understood, much of the suspicion directed toward it from certain quarters will vanish. Instead of desiring to **INTERFERE**, the A. A. G. O. and its official publication, the **AMERICAN GARAGE AND AUTO DEALER**, desire to **HELP**. In jurisdictions where Local and State bodies have a small membership, we desire to supplement that membership with the A. A. G. O. membership and thus make it more potential in obtaining **RESULTS OF BENEFIT TO ALL**.

Wherever it is feasible, a union of these interests should be effected. Wherever it is not feasible the two interests should work together in harmony for membership building purposes. The A. A. G. O. field workers can obtain memberships for both organizations, as also can the state or local body if it employs a field worker.

Get together, men. The job we have undertaken is entirely too

large and too important to be frittered away in factional activities. Men of small minds only would look upon such activities with favor, while the large-hearted, full-blooded men of our craft will brush them aside and **UNITE IN A MIGHTY SWEEP OF ACTIVITY THAT WILL COUNT FOR CONSTRUCTIVE AND REMEDIAL RESULTS**.

The garage and retail auto industry is young. It is gradually rising above the debris of haphazard methods and is organizing into a solid, substantial, progressive industry. All of this is being and must continue to be done with considerable rapidity on account of the tremendous growth of the trade. Therefore, the energies and thought of all right-minded men of our craft will be directed toward **UNITING AND CONSTRUCTING FOR THE FUTURE**, rather than dividing and tearing down that which has been built in the past.

The A. A. G. O. glories in the splendid leadership which it finds in various Cities and States throughout the country. No man who has attained any eminence because of his good work needs fear that he will be displaced and other leaders thrust forward by the A. A. G. O. So far as the officers and leaders of the national organization are concerned, they hope **TO GIVE**

**WIDER AND MORE EFFECTIVE SCOPE TO THE LEADERSHIP OF THOSE WHO HAVE DONE PIONEER WORK** and are deserving of further honors. Petty politics have wrecked many an Association, and such destructive tactics will be frowned upon by your national officers and the directors of your journal.

With the already large amount of work ahead of us to do, let us all **GET TOGETHER** and push for success that will mean **THE SUCCESS OF ALL**, rather than the **GLORY OF THE FEW**. Cooperation from every quarter is welcomed. **OBSTRUCTION WILL NOT BE TOLERATED**.

## Harmful Phases of A Political Primary

**T**HE harmful phases of a political primary are apparent. The purpose of the primary was to enable the members of a party to select their candidates in a thoroughly democratic manner and thereby preserve the highest functions and usefulness of the party. The result has been different, because many rival candidates for nominations have vilified and misrepresented each other, with the result that the nominees thus selected were not placed before the voters in their best light. Primary contests often come nearer to wrecking the party than to performing the useful service of democratically selecting its candidates.

The lesson to organizations, trade bodies and individuals is plain. Rivalry is wholesome, but destructive criticism and misrepresentation are harmful, often doing the critic more damage than the criticised, but withal casting a serious reflection upon **THE ENTIRE FIELD**.

Taking the lesson home to us, we would urge our members as individuals to refrain from captious and destructive criticism of business rivals and as organization advocates from derogatory statements regarding other organiza-

tions. By injuring others we injure a part of our own household, and in times of stress when legislation is desired or business reforms are in great need, we have so weakened our craft influence and standing that all cannot pull together in the work of obtaining the best results.

It is a good rule to **ALWAYS BOOST YOUR OWN BUSI-**

**NESS AND ASSOCIATION TO THE BEST OF YOUR ABILITY**, leaving others free to do the same by theirs. This sort of rivalry will conduce to the highest usefulness of all and bring **BENEFITS** in place of injuries, **GOOD FEELING** in place of bitterness, and **SUCCESS** in a form that will best meet the requirements of our craft situation.

## Our Lower Cost Gasoline Fight

**T**HE fight for lower gasoline prices inaugurated by the American Association of Garage Owners is now fairly under way. Petitions are being circulated, and some of our members have sent in the blank forms signed up with their full quota of 100 names of voters who are car owners.

Let every garage man do his part in this campaign. The larger the number of petitioners, the greater weight will the petition have with members of Congress. Remember, your district should be strongly represented, because it is the signatures from **YOUR** district that will have the right sort of influence with **YOUR** Congressman.

Some garage men have misunderstood the scope of this work and have signed the blank form which appeared on page 56 of the September number and sent it in to us, whereas they should have **CUT OUT THE BLANK FORM**, pasted it at the top of a long sheet of paper, signed it themselves, **THEN SECURED THE SIGNATURES OF 100 VOTERS** before mailing it in to Headquarters. The signature of the garage man counts but one and the line for his signature is employed mainly to indicate that he has circulated the petition and secured the 100 signatures below it.

We have regular blank forms of petition with enough space at the bottom for 100 signatures. These will be sent to any member of the association on receipt of a postal card request. **LET US**

**ALL GET BUSY**, Brothers, and roll up a big petition. We may not be able to get exactly what we want from Congress, but by showing the proper fighting spirit and organization ability **WE CAN FORCE ACTION** that will be beneficial in some degree.

Every one of the bills mentioned in the form of petition, if enacted into law, will exert the right kind of influence on the market for petroleum products, chief of which is gasoline. If the government oil lands were opened for development, and if exports of gas crude were prohibited or penalized by export taxes, or if the Federal Trade Commission could be given power to fix reasonable prices, the gasoline consumers of the country would obtain a much better and squarer deal.

The text of the petition is as follows:

**Attention, Motorists—If you are interested in lowering the excessive cost of gasoline. At the coming convention of the American Association of Garage Owners, to be held in Chicago in January, 1917, one or more of the following bills, all of which are now before Congress, will be chosen as the means of accomplishing this result: The Howard Bill, to prohibit the exportation of crude oil containing gasoline; the Stearnson Bill, to allow the Federal Trade Commission to fix the price; the Ferris General Leasing Bill, to throw open millions of acres of government-owned oil lands; and the Export Tax Bill.**

**Get Into the Movement. Work for the Good of This Cause.**

**Pledge: I, the undersigned, a qualified voter in these United States of America, hereby pledge my support to the bill or bills urged for passage by the A. A. G. O. and agree to use my influence with the senators from my state and the representatives from my district to compel favorable consideration of said legislation, and**

**I also agree to interest one or more voters in this movement.**

**Name of G. O. ....**

**Address ....**

**(Space for 100 names of car owners)**

This petition in the hands of 15,000 garage men, auto dealers, auto shop repairers, and auto and supply station keepers who will do their full duty, means a demand on Congress signed by 1,500,000 voters asking for action that will bring relief to a market that is generally admitted to be monopoly controlled. Isn't this worth working for? We are working for ourselves, yet the public will benefit and applaud our efforts.

## Our Insurance Department

**I**T is most gratifying for us to announce that the Insurance Department of this Association is **NOW READY** to take care of the insurance interests of its members. Long and careful planning has resulted in an inter-insurance organization supplemented by re-insurance resources which enables us to **WRITE BUSINESS** now covering every feature of liability that the garageman, auto dealer and auto repairer encounters, including fire, theft, accident, workingmen's compensation, etc.

The Insurance Department of this organization has **ACCOMPLISHED SOME THINGS THAT ARE UNIQUE**. First of all, the power of attorney under which the Exchange will do business combines fire and casualty operations; secondly, in the casualty field this Exchange will be the first to write business on a **MONTHLY** pay-in-advance basis, instead of an **ANNUAL** pay-in-advance basis. No institution except an Association conducted not for profit would think of doing such a thing.

The **ABSOLUTE PROTECTION** afforded by the A. A. G. O. Insurance Exchange is beyond question. The most conservative business policy possible has been adopted. **NO SPECULATIVE CHANCES** whatever are being or will be taken. The Exchange will



have the benefit of experience and talent of the highest order and the needs of our members will be fully met at A WORTH-WHILE REDUCTION IN THE COST.

Many garagemen and others in our field carry NO INSURANCE WHATEVER because of the excessive cost. Under the A. A. G. O. plan, these members will be given absolute protection and THE COST WILL BE SCIENTIFICALLY CORRECT, abolishing the high or prohibitive cost which the general fire underwriters or the casualty companies have wished upon us.

Right here we desire to say to the garage and allied crafts of the United States that BEFORE MANY YEARS PASS, THERE WILL NOT BE A GARAGEMAN, AUTO DEALER OR REPAIR SHOP PROPRIETOR WHO WILL FEEL THAT HE CAN AFFORD TO STAY OUT OF THIS ORGANIZATION and thus forego the benefits of this insurance. This is a bold statement of prophesy, but IT WILL BE FULFILLED.

#### AUTO TRADE ASSIMILATES CHANGES

Have you noticed that the year's new models of automobiles show the turbulent period of change and experiment marked by the two preceding years has passed, and that while there is a maintained effort for progress, construction has now settled into a new phase of established method? It is characteristic of the automobile industry that it assimilates changes rapidly and steadily evolves standards which gain general recognition.

#### IN "GOOD OLD PENNA."

Among the recent new members of the A. A. G. O., is the Wagner Motor Car Company, automobile supply dealers at Reading, Pa. Mr. Wagner is one of the most popular men of the craft in that part of the Keystone state. He is greatly pleased with the activities of our National Association, and was of invaluable assistance to field representative A. P. Meng in the work in that section of Pennsylvania. The craft at Reading, as in other parts of the State, are very strongly in favor of a lien law and are ready to take their coats off and work to pass it when the legislature meets at Harrisburg.

## Garage Efficiency

### Announcement

*To the Subscriber, Associations, Advertisers and Other Friends of Garage Efficiency:*

It is with a mixture of regret and pleasure that I announce the sale of this publication to Mr. C. M. Carr and his associates of the AMERICAN GARAGE AND AUTO DEALER for the American Association of Garage Owners, and, through this sale, the merging of the two publications into one.

The regret comes from my retirement from a field of activity that has given me much inspiration and pleasure and has enabled me to do important and constructive work for the interests I have endeavored to represent as an editor and publisher. The pleasure is the outgrowth of a knowledge that the combined publications under the name of the AMERICAN GARAGE AND AUTO DEALER will be able to render better service in the interest of the constituency I have striven to serve than was possible heretofore. Their financial resources, publishing experience and ability and long connection and service with associations and their affairs place my successors in a position to carry forward the work in a manner that will without doubt prove gratifying to all.

Mr. Carr is a leader of men. He is a creator of activities that have been beneficial to the trades and industries he has served in the past and his influence has always been to harmonize and build up rather than to obstruct or divide.

The aid and encouragement of my friends has been invaluable. The feelings of affection and comradeship this relation has engendered will be lifelong, and in this public manner I desire to acknowledge and express appreciation for the co-operation and assistance these co-workers have so generously given me.

The retail automobile and garage industry has a wonderful future. It has been an inspiration to me and it will be a continued inspiration to my successors. In retiring from this field to enter another line of work, my parting message is: Get together. Support your associations. Co-operate with your leaders. Boost your own organizations and your own business interests. And the objects you unitedly seek will be gained because you deserve them and are willing to work together to achieve them.

Faithfully yours,

WESLEY T. CHRISTINE.

*To the Readers and Friends of Garage Efficiency:*

The undersigned is greatly pleased to be able to join Mr. Wesley T. Christine in this announcement of the purchase of *Garage Efficiency*, or as it has recently been known, *Retail Motor Trade Journal*, and the merging of it with the AMERICAN GARAGE AND AUTO DEALER, formerly known as the AMERICAN GARAGE MAGAZINE. It is the desire of my associates and myself in bringing together the two publications that have done such excellent work to ultimately so harmonize the interests behind the two publications as to make for greater efficiency in serving a most remarkable constituency—a constituency composed of garage men, shop men, dealers and others comprising the entire retail merchandising and retail service branch of the automobile industry.

I have been familiar with the work of *Garage Efficiency* from its inception. It has always been an excellent and deserving publication. Mr. Frank H. T. Potter, the original editor; Mr. Edward H. Fox, then Mr. Christine, have each contributed of their knowledge and splendid enthusiasm to the work of building for the future of our craft. Mr. Christine put his heart and brain generously into well-timed and equally well-balanced efforts. He has laid our craft under enduring tribute. He retires from this field with laurels won over which any man might well be proud, and I am glad to join his many friends throughout the trade, including association leaders, contributors, garagemen, dealers, etc., in wishing him in all of his new future undertakings Godspeed and the highest measure of success.

It will be the purpose of the combined journals under the name of the AMERICAN GARAGE AND AUTO DEALER to render the best possible service to the subscribers of *Garage Efficiency* and the associations which it has so capably and faithfully served. We want all such subscribers and associations to feel that they are a part of the united forces and are to be given the benefit, together with the original subscribers, associations and individual members associated with the present publication from its start, of the consolidated activities and resources, without discrimination and with identical feelings of sympathetic co-operation, fraternity and good-will.

Fraternally yours,

CHARLES M. CARR.

### ELECT A. A. G. O. MAN TO LEGISLATURE

W. Clyde Harer of Williamsport, Pa., is the republican nominee for member of General Assembly of Pennsylvania from Lycoming county. Clyde, as he is more commonly known to his host of admiring friends in old Lycom-



ing, is a new member of the A. A. G. O. and has just resigned his position as cashier of the largest lumber company in Pennsylvania to take care of the growing business of his young and enterprising firm—The Harer-Wurster Company—of which he has been a member since its inception.

Clyde asks for and should receive the active support of all members of this

association in particular and the garage shop and dealer craft in general. He is clean, honest, and thoroughly qualified to fill the position to which he aspires. He will not only vote right on all questions in which the A. A. G. O. is vitally interested (which are your interests), but will give them his hearty support.

He was a member of Williamsport's old city council and is at present a member of the school board, becoming a candidate in all instances at the earnest solicitation of his host of admiring friends, and was elected, without effort on his part, by overwhelming majorities.

Let's all get on the band wagon and "whoop-'er-up" for Clyde. We need men of his calibre in the legislature.

### THE IOWA STATE ASSOCIATION

The Iowa Automobile Trade Association has been organized to look after the interest of garage men, retail auto dealers and auto accessory dealers in the Hawkeye state and has elected W. B. Hunt, of Burlington, president; Frank A. Skipton, Council Bluffs, vice-president; Samuel L. Seeman, Des Moines, secretary; J. Stolp, Des Moines, treasurer; and the following directors, J. T. Werhan, Waukon; Charles England, Van Meter; T. S. Wood, State Center; J. A. Holdman, Des Moines; F. D. Dickens, Diagonal; Peter Jensen, Audubon; Sydney Smith, Washington; Martin Lewis, Belmond; J. H. Garring, Montezuma; J. E. Doo-man, Iowa Falls; W. H. Barker, Jefferson.

While the association is young it is

said to be one of the strongest in the United States and maintains an office in the Youngerman building. Judging from a letter received at A. A. G. O. headquarters from Secretary Seeman, we are convinced that the new organization means business and, on their invitation, the A. A. G. O. will give them and their work hearty co-operation. In harmony with the policy of the national officers not to interfere in purely state affairs, the A. A. G. O. will supplement the efforts of the state bodies in every possible manner and make them more effective in obtaining results. Brother Seeman and his associates in the I. A. T. A. have the sincerest wishes of the A. A. G. O. officers and boosters for their future and permanent success.

### NATIONAL ORGANIZER CHASE IS AGAIN ON THE JOB IN CHICAGO

After six months of strenuous and highly productive labors in other fields, National Organizer S. F. Chase has returned to his "first love" (Chicago), to renew old acquaintances and induce the stragglers and new comers to come into the protecting fold of the A. A. G. O.

There have been so many new features added to the association's activities since Mr. Chase worked this territory that his old friends will have nearly as much to learn as will the new ones.

He has associated with him in his labors Mr. J. C. Fleming—a "live-wire." They make a great team and are doing some great work.

## Kansas Garages Are Flourishing—One of the Newest



Kansas garages are prosperous and flourishing and none are more up-to-date and classy than those in Kansas City, Kans., and among them stand out prominently the Northwestern Garage. Its proprietors are active, enterprising and public-spirited citizens and business men, and the illustrations shown herewith give an idea of the character of the place and the spirit that animates those who operate it.

The garage caters to the best class of trade and numbers among its patrons a large clientele of ladies, and special accommodations have been made for them. The business includes storage, livery, repairs, car agencies and the entire range of garage activities. They are members of the A. A. G. O. and favor progressive legislation in the interest of garagemen and car owners.

# "Putting It Over!" What? Car Sales

A Story of How the Live Garageman Can Make a Good Car Agency Pay by Keeping in Close Touch With His Customers—You Can Do It!

By F. L. Hadley

Mr. Williams, vice-president of the National Bank of F...., Ohio, drove his 1914 model X.... into the A. A. G. O. garage, and stopping it on the wash rack, leaned back in the seat and heaved a big sigh.

He was not in love—far be it from such—the "trouble," in a few words, was this: As he rounded the corner on Main street, not ten minutes before, he had passed Jim Wood, of the Globe Clothing Store, who was driving one of the niftiest cars he had seen in many a day.

There was no doubt about it belonging to Woods, as he had shouted in passing: "What do you think of my new car, Frank?"

To which Williams had replied, in a half-hearted way: "T's all right!"

That's what troubled Mr. Williams! After giving vent to another—and more pronounced—sigh of dissatisfaction, Mr. Williams climbed out of his car, and after giving it a glance of disapproval, he started for the front of the garage.

He didn't go far!

Right in front of him and to his left was standing an exact duplicate of the car he had seen Wood in about twenty minutes before. It wasn't Wood's—that was certain, for there hadn't been a car come into the garage while he was there.

Williams walked over and with eager, admiring eyes, inspected the four-doored beauty.

While thus employed, Bob Davis,

owner of the garage, and a live A. A. G. O. man, spied him. "Well, what do you think of my new demonstrator?"

"It looks like the one I saw Wood of the Globe Clothing Store driving a little while ago. It's the 1917 B...., isn't it?" asked Williams, all the more dissatisfied.

"Yes, it's a B.... This one and the one you saw Wood driving came together this morning, only his is a '30' and this 'buckwheat' is a '40.' You know I have got the agency now for this car. Ain't it a dandy, though!" exclaimed the enthusiastic Davis.

"It 'looks' all right enough," admitted Williams, reluctantly, "but what's she got inside of her? It's the engine that counts!"

This was what Davis was looking for, and the next minute he had the hood up, and was handing Friend Williams a practical sales talk, including price, exchange terms, etc.

Davis wasn't a salesman, but he sure knew cars, and what he told Williams the latter could testify to from "A1" repair jobs that Davis had done for him.

After Davis had explained the engine, he turned to Williams, who was antagonizing the remaining six hairs on his almost nude dome, and said, after looking at his watch:

"It's just five o'clock, and a dandy day out! Jump in and I'll take you a little spin to show you how it runs; and then I'll drive you home!"

They both got in the front seat. Davis threw on the battery, gave the starter a kick, and away they went.

\* \* \*

At six-thirty Davis drove up in front of the Williams residence, and Mr. Williams stepped out of the car, which stood purring like a contented cat.

He wasn't the same Mr. Williams, either! Instead of that dejected look of dissatisfaction there shone on his face a smile of contentment that came from making a charitable decision, and possibly in anticipation of the pleasant surprise he would soon give his family.

With a wave of his hand and a pleasant "good night, Davis!" he proceeded up the path to his house.

Davis drove slowly away, steering the car with one hand, and patting his inside coat pocket with the other.

It contained an order for a B.... "40," and a deposit check of \$500.

\* \* \*

This is only one example of where an easy sale was made, and it should serve to show you, Mr. Garageman, what an advantage you have in handling a good car, due to the fact that your prospects are already customers and friends, and it is only necessary to keep in close touch with them and watch their cars, and when the right time comes to "talk business." You don't have to get acquainted—you know your prospect—he's your friend! Follow Davis' example! (And this applies to everything the garage handles.)

## The Michigan Garage Lien Law

On request of a number of our Michigan members, we are reprinting the text of the Michigan lien law. The law is an excellent one as far as it goes, but should be amended so as to extend its scope and protective features and simplify procedure thereunder. The text of the law follows:

"An act to establish, protect and enforce by lien the rights of garage keepers who furnish labor or material for storing, repairing, maintaining, keeping or otherwise supplying automobiles or other motor propelled vehicles.

"Section 1. That every garage keeper who shall in pursuance of any contract, expressed or implied, written or unwritten, furnish any labor, material or supplies shall have a lien upon any automobile or other motor propelled vehicles stored, maintained, supplied or repaired by him for the proper charges due for the storage, maintenance, keeping and repair thereof and for gasoline, electric current or other accessories and supplies furnished or expenses

bestowed or labor performed thereon at the request or with the consent of the registered owner of the license plates of said motor vehicle, and such garage keeper may detain such

automobile or other motor propelled vehicle at any time it may be in his possession within ninety days after performing the last labor or furnishing the last supplies for which such lien is claimed.

"Section 2. If such charges are not paid within ninety days after personal service of a claim of lien, together with an itemized statement of the account upon the registered owner of the license plates of said automobiles or other motor propelled vehicles, said garage keeper may advertise and sell said automobile or other motor propelled vehicle at public auction, in the same manner and after the same notice required in sales of property seized on chattel mortgage, to the highest bidder to satisfy said claim, and the garage keeper may bid on the vehicle so offered for sale. Any surplus received at said sale shall, after all charges of said garage keeper have been paid and satisfied and all costs of sale have been deducted, be returned to the owner of said automobile or other motor-propelled vehicle.

"Section 3. Wherever, in the act, is used the term 'garage keeper' it shall be construed to in-

A. A. G. O. TO N. A. A. J.  
(A Telegram)

The National Association of Automobile Accessory Jobbers,  
Planter's Hotel,  
St. Louis, Mo.

Greetings of American Association of Garage Owners. Stand by garage men and dealers as retail distributors of auto accessories and they will stand by you in maintaining your rights as wholesale distributors.

C. M. CARR,  
Secretary-Treasurer.

clude all persons who for hire or reward publicly offer to store, maintain, keep and repair automobiles and other motor propelled vehicles and to furnish accessories and supplies for automobiles or other motor propelled vehicles, for the transportation of persons or merchandise upon and over the public streets and highways; provided, that in municipalities wherein are in force any laws or ordinances relative to the regulation and licensing of garages, no person shall be entitled to avail himself of the provisions of the act unless he shall, during the period of the whole time covered by his claim for lien, have been duly licensed and shall have fully complied with all laws and ordinances relative to the licensing of garages."

#### VICE-PRESIDENT I. A. L. PLEADS GUILTY — BIDWELL MAKES REFUNDS TO VICTIMS

Harry A. Van Auken, said to be vice-president of the International Automobile League of Buffalo, who has been in jail at Uniontown, Pennsylvania, since March 8, charged with conspiring to defraud, by Fayette County officials, has entered a plea of guilty and has been paroled for two years.

Richard H. Lee, special counsel for the National Vigilance Committee, who in connection with A. A. G. O. members in Uniontown and Fayette county, and officials of the A. A. A., brought about the action in Uniontown against officials of the League, consented to a nolle of the Uniontown indictment against A. C. Bidwell, president of the league. This was done in view of the fact that Bidwell is to be tried in the Federal Courts of New York State early this Fall, and that Bidwell has been forced to pay back all of the money taken from Fayette county people by agents of the league, and pay back all the expense to which the county and individuals have been put in prosecuting him and his agents.

The postoffice fraud order issued on August 3 against the International Automobile League, and subsequent fraud orders against concerns formed to evade the first order, have put the league out of business completely.

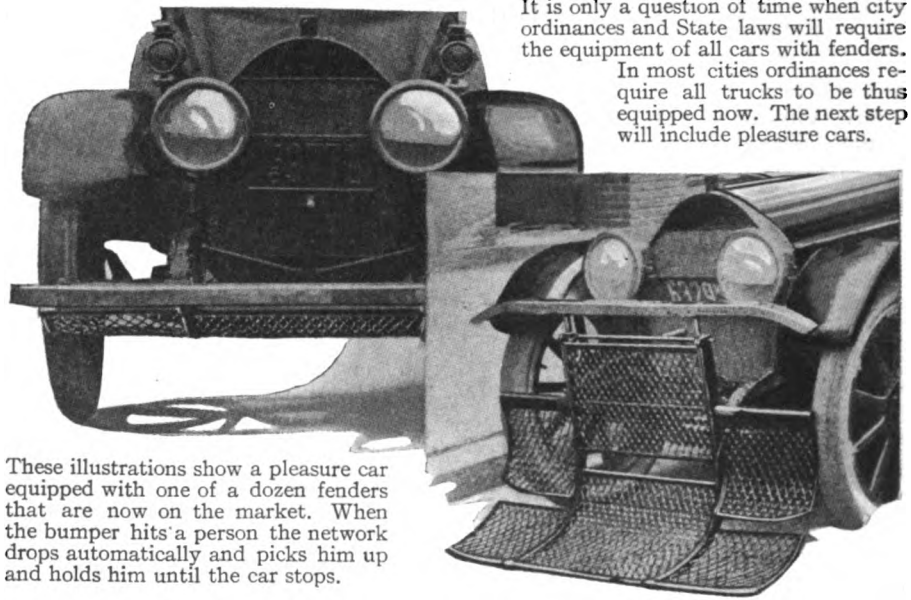
The National Vigilance Committee will be represented by Mr. Lee at the forthcoming criminal trial of A. C. Bidwell in the Federal Courts of New York and the A. A. A. and A. A. G. O. will also be represented.

#### ONE MEMBER'S BIG BOOST

One of our good members in commenting upon the effect of our "Dead Beat" and Fraud Register, states that some of the boys look upon it in the light of "Kicking a man when he is down," but he says to them that our Association is simply exposing the man who "Kicks us when we are down." He adds:

"I want to say that the A. A. G. O. has certainly some dandy plans mapped out for the garage man. If he would only listen to your field man when he

## Fenders For Automobiles Are Coming Into Use



These illustrations show a pleasure car equipped with one of a dozen fenders that are now on the market. When the bumper hits a person the network drops automatically and picks him up and holds him until the car stops.

It is only a question of time when city ordinances and State laws will require the equipment of all cars with fenders. In most cities ordinances require all trucks to be thus equipped now. The next step will include pleasure cars.

comes in, instead of interesting himself so exclusively with some old grease cup or some other work that could be done afterwards and not when an organizer is trying to tell him something that will save or make him dollars during the months and years to come, the trade would progress much more rapidly.

"The way I look at it is this: If the average garage owner had the proper sense of his own welfare and would take into consideration the money involved in his business, which demands system, organization, mutual understanding between himself and his neighbors in business and the public, fair and proper legislation covering his special interests, etc., he, the garage owner, would drop everything and listen to the A. A. G. O. man who comes in and tries to do him the kindness of interesting him in this great work. Instead, though, the organizer often must study the garage man and attack him where he is weak and relieve him for his own best interest of enough money to get a thing started that works for his great good and is destined to be the largest organization in the world."

#### REPORT TOO LONG DELAYED

The real live topic of interest a few months ago was the forthcoming report of the Federal Trade Commission which has been investigating the high price of gasoline. As most of the information contained in the report has leaked out, and as the report itself has been completed for some time except as to conclusions, the complete report will not, it is thought, contribute much of any value to current thought on the subject when it is published.

## LOOK OUT FOR THESE FLIM-FLAMMERS

#### TIRE COMPANY OFFICIALS ARRESTED

Carl F. Guyer, president and Ralph C. Harper, secretary of the Double Service Tire & Rubber Company, Akron, O., have been arrested by Federal authorities charged with using the mails to defraud.

Many complaints against the methods of this company, which has used newspaper and farm paper advertising extensively, had been received and repeated warnings failed to work reformation and more vigorous action was necessary.

The business of the Double Service Tire & Rubber Company was building a tire out of two old tires, by stitching them together. They claimed the tire they made would give seven thousand miles of service. However, users of the tires complained that after fifty miles or so of continuous service, they were worthless.

It is alleged that when this company found the scheme was not feasible, they simply kept the money sent them by prospective customers, obtained through advertising.

#### ANOTHER ONE

Mark B. Miller, has been arrested for conducting what is said to be a similar business at Piqua, Ohio, under the name of the Piqua Tire & Rubber Company. Beware of this and other cheap snide tire concerns.

# The Ferris General Oil Leasing Bill

One of the Measures Congress Is Urged to Pass in an Effort to Reduce Gasoline Prices—  
Would Open Five Million Acres of Oil Land to General Leasing—

A. A. G. O. Favors Bill

Following is the full text of the Ferris General Leasing Bill which will open to the public 5,000,000 acres of government

oil land, besides releasing coal and other lands, the development of which will greatly increase the wealth of our coun-

try and spread prosperity among the people, besides giving to the market for gasoline a more natural basis:

## THE FERRIS BILL.

An act to authorize exploration for and disposition of coal, phosphate, oil, gas, potassium or sodium.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

That deposits of coal, phosphate, oil, gas, potassium or sodium owned by the United States, including those in national forests, the Grand Canyon national monument and the Mount Olympus national monument, but excluding those in national parks, and in lands withdrawn or reserved for military or naval uses or purposes, shall be subject to disposition in the form and manner provided by this act to citizens of the United States, or to any association of such persons, or to any corporation organized under the laws of the United States, or of any state or territory thereof, and in the case of coal, oil or gas to municipalities.

## COAL.

Sec. 2. That classified coal lands or deposits of coal belonging to the United States, exclusive of those in Alaska, may, unless an offering, an application for offering, or an application for lease is pending hereunder, be acquired in accordance with the provisions of sections 2,847 to 2,862, inclusive, of the United States Revised Statutes, and acts amendatory thereof or supplemental thereto, or such lands or deposits may be leased, as hereinafter provided.

Sec. 3. That the Secretary of the Interior is authorized to, and upon the petition of any qualified applicant shall, divide any of the coal lands or the deposits of coal, classified and unclassified, owned by the United States outside of the Territory of Alaska, into leasing blocks or tracts of forty acres each, or multiples thereof, and in such form as, in the opinion of the Secretary of the Interior, will permit the most economical mining of the coal in such blocks, but in no case exceeding 2,560 acres in any one leasing block or tract; and thereafter the Secretary of the Interior shall, in his discretion, from time to time upon the request of any qualified applicant or on his own motion, offer such lands or deposits of coal for leasing, and, upon a royalty fixed by him in advance, shall award leases thereof through advertisement, by competitive bidding, or, in case of lignite or low-grade coals, such other methods as he may by general regulations adopt, to any qualified applicant: *Provided*, That no railroad or other common carrier shall be permitted to take or acquire through lease or permit under this act any coal lands or deposits of coal in excess of such area or quantity as may be required and used solely for its own use, and such limitation of use shall be expressed in all leases or permits issued to railroads or common carriers hereunder. That such a railroad or common carrier may be permitted to take under the foregoing provisions not to exceed one lease hereunder upon and for each 300 miles of its line in actual operation. The term "railroad" or "common carrier" as used in this act shall include any company or corporation owning or operating a railroad, whether under a contract, agreement or lease, and any company or corporation subsidiary or auxiliary thereto, whether directly or indirectly connected with such railroad or common carrier, but shall not include spurs, switches or branch lines operated by any lessee and necessary to connect the mine with the line or lines of any railroad or other common carrier.

Sec. 4. That any person, association or corporation holding a lease of coal lands or coal deposits under this act may, with the approval of the Secretary of the Interior, upon a finding by him that it will be for the advantage of the lessee and the United States, secure modifications of his or its original lease by including additional coal lands or coal deposits contiguous to those embraced in such lease; but in no event shall the total area embraced in such modified lease exceed in the aggregate 2,560 acres.

That upon satisfactory showing by any lessee to the Secretary of the Interior that all of the workable deposits of coal within a tract covered by his or its lease will be exhausted, worked out or removed within three years thereafter, the Secretary of the Interior may, within his discretion, lease to such lessee an additional tract of land or coal deposits, which, including

the coal area remaining in the existing lease, shall not exceed 2,560 acres, through the same procedure and under the same conditions as in case of an original lease.

Sec. 5. That if, in the judgment of the Secretary of the Interior, the public interest will be subserved thereby, lessees holding under lease blocks or areas not exceeding the maximum permitted under this act may consolidate their leases or holdings through the surrender of the original leases or holdings and the inclusion of such areas in a new lease of not to exceed 2,560 acres of contiguous lands.

Sec. 6. That where coal lands aggregating 2,560 acres and subject to lease hereunder do not exist as contiguous areas, the Secretary of the Interior is authorized, if, in his opinion, the interests of the public and of the lessee will be thereby subserved, to embrace in a single lease sections or parts of sections which corner upon one another.

Sec. 7. That for the privilege of mining or extracting the coal in the lands covered by this lease the lessee shall pay to the United States such royalties as may be specified in the lease, which shall be fixed in advance of offering the same, and which shall not be less than 2 cents per ton of 2,000 pounds, due and payable at the end of each month succeeding that of the extraction of the coal from the mine, and an annual rental, payable at the date of such lease and annually thereafter, on the lands or coal deposits covered by such lease, at such rate as may be fixed by the Secretary of the Interior prior to offering the same, which shall be not less than 25 cents per acre for the first year thereafter, not less than 50 cents per acre for the second, third, fourth and fifth years, respectively, and not less than \$1 per acre for each and every year thereafter during the continuance of the lease, except that such rental for any year shall be credited against the royalties as they accrue for that year. Leases shall be for indeterminate periods upon condition of diligent development and continued operation of the mine or mines, except when such operation shall be interrupted by strikes, the elements or casualties not attributable to the lessee, and upon the further condition that at the end of each twenty-year period succeeding the date of the lease such readjustment of terms and conditions may be made as the Secretary of the Interior may determine, unless otherwise provided by law at the time of the expiration of such periods: *Provided*, That the Secretary of the Interior may, if in his judgment the public interest will be subserved thereby, in lieu of the provision herein contained requiring continuous operation of the mine or mines, provide in the lease for the payment of an annual advance royalty upon a minimum number of tons of coal, which in no case shall aggregate less than the amount of rentals hereing provided for.

Sec. 8. That in order to provide for the supply of strictly local and domestic needs for

fuel, the Secretary of the Interior may, under such rules and regulations as he may prescribe in advance, issue to any applicant qualified to obtain a lease under section three of this act a limited license or permit granting the right to prospect for, mine and dispose of coal belonging to the United States on specified tracts, not to exceed ten acres in any one coal field, for a period of not exceeding ten years, on such conditions not inconsistent with this act, as in his opinion will safeguard the public interest, without payment of royalty for the coal mined or for the land occupied: *Provided*, That not more than one such limited license or permit shall be issued to any single applicant hereunder: *And provided further*, That in the case of municipal corporations the Secretary of the Interior may issue such limited license or permit, for not to exceed 160 acres, upon condition that such municipal corporations will mine the coal therein under proper conditions and dispose of the same without profit: *And provided further*, That the acquisition or holding of a lease under the preceding sections of this act shall be no bar to the acquisition of such tract or operation of such mine under said limited license.

## OIL AND GAS.

Sec. 9. That the Secretary of the Interior is hereby authorized, under such necessary and proper rules and regulations as he may prescribe, to grant to any applicant qualified under this act a prospecting permit, which shall give the exclusive right, for a period not exceeding two years, to prospect for oil or gas upon not to exceed 640 acres of lands wherein such deposits belong to the United States and are located within ten miles from any producing oil or gas well, and upon not to exceed 2,560 acres of land wherein such deposits belong to the United States and are situated over ten miles from any producing oil or gas well, upon condition that the permittee shall begin drilling operations within six months from the date of the permit, and shall, within one year from and after the date of permit, drill for oil or gas to an aggregate depth of not less than 500 feet, and shall, within two years from date of the permit, drill for oil or gas to an aggregate depth of not less than 2,000 feet. Whether the lands sought in any such application and permit are surveyed or unsurveyed, the applicant shall, prior to filing his application for permit, locate such lands in a reasonably compact form and according to the legal subdivisions of the public land surveys if the land be surveyed; and in an approximately square or rectangular tract if the land be an unsurveyed tract, the length of which shall not exceed two and one-half times its width, and if he shall cause to be erected upon the land for which a permit is sought, a monument not less than four feet high, at some conspicuous place thereon, and shall post a notice in writing on or near said monument, stating that an application for permit will be made within thirty days after date of said notice, the name of the applicant, the date of the notice and such a general description of the land to be covered by such permit by reference to courses and distances from such monument and such other natural objects and permanent monuments as will identify the land, stating the amount thereof in acres, he shall during the period of thirty days following such marking and posting be entitled to a preference right over others to a permit for the land so identified. The applicant shall, within ninety days after receiving a permit, mark each of the corners of the tract described in the permit upon the ground with permanent monuments, so that the boundaries can be readily traced on the ground, and shall post in a conspicuous place upon the lands a notice that such permit has been granted and a description of the lands covered thereby: *Provided*, That in the Territory of Alaska prospecting permits may be granted for periods not exceeding four years, actual drilling operations shall begin within two years from date of permit, and oil and gas wells shall be drilled to a depth of not less than 500 feet within three years from date of the permit and to an aggregate depth of not less than 2,000 feet within four years from date of permit: *And provided further*, That in said territory the applicant shall have a preference right over

## "KEEP UP THE GOOD WORK," SAYS UTAH GARAGEMAN

We have just received our first copy of your valuable magazine. We are very much pleased with it. The article on "Standardization of Prices" is especially good. It is just what we have been wanting to do for a long time. Keep up the good work, and if we can help you in any way let us know.

Yours sincerely,  
NORTHWESTERN GARAGE,  
(A. H. Swan.) Salt Lake City, Utah.



others to a permit for land identified by temporary monuments and notice posted on or near the same, for six months following such marking and posting, and upon receiving a permit he shall mark the corners of the tract described in the permit upon the ground with permanent monuments within one year after receiving such permit.

Sec. 10. That upon establishing to the satisfaction of the Secretary of the Interior that valuable deposits of oil or gas have been discovered within the limits of the land embraced in any permit, the permittee shall be entitled to a patent for one-fourth of the land embraced in the prospecting permit, such area to be selected by the permittee in compact form and according to the legal subdivisions of the public land surveys, if the land be surveyed, or to be surveyed at his expense in accordance with the laws, rules and regulations governing the survey of placer mining claims if located upon unsurveyed lands: *Provided*, That all merchantable timber upon land patented hereunder shall be reserved to the United States to be cared for, used or disposed of in accordance with applicable laws and regulations, and such reservation shall be expressed in each patent issued hereunder: *Provided further*, That each permittee who desires to secure a patent under the terms of this section shall, within ninety days from and after discovery of valuable deposits of oil or gas in the land embraced in his permit, file in the land office of the district in which the land is located, his application for patent for the tract selected, in default of which he shall be required to thereafter pay royalty for the oil or gas produced therefrom during the remainder of the term covered by his permit, as may be fixed by the Secretary of the Interior, and the tract and deposits of oil or gas therein shall thereafter be subject to lease as prescribed in section eleven hereof.

Sec. 11. That all permits, leases and patents of lands containing or supposed to contain oil or gas, made or issued under the provisions of this act, shall be subject to the condition that no wells shall be drilled within 200 feet of any of the outer boundaries of the lands embraced within any permit, lease or patent, unless the adjoining lands have theretofore been patented or the title thereto otherwise vested in private owners, or unless the lessees or patentees of such adjoining lands shall, with the approval of the Secretary of the Interior, agree to the drilling of wells and removal of the oil or gas from the 200-foot tracts or reservations herein created, and to the further condition that the permittee, lessee, entryman or patentee will, in conducting his explorations and mining operations, use all reasonable precautions to prevent waste of oil or gas developed in the land, or the entrance of water through wells drilled by him to the oil sands or oil-bearing strata, to the destruction or injury of the oil deposits. Violations of the provisions of this section shall constitute grounds for the forfeiture of the permit, lease or patent, to be enforced through appropriate proceedings in courts of competent jurisdiction.

Sec. 12. That all deposits of oil or gas and the unentered lands containing the same and classified as oil or gas lands, or proven to contain such deposits, except, however, those embraced in any prospecting permit during the life of the same, those patented or for which application for patent by the permittee is pending under the provisions hereof, may be leased by the Secretary of the Interior through competitive bidding under general regulations in areas not exceeding 640 acres and in tracts which shall not exceed in length two and one-half times their width, such leases to be conditioned upon the payment by the lessee of such royalty as may be fixed in the lease, which shall be not less than one-tenth in amount or value of the production, which royalty on demand of the Secretary of the Interior shall be paid in oil or gas, and the payment in advance of a rental of not less than \$1 per acre per annum thereafter during the continuance of the lease, the rental paid for any one year to be credited against the royalties as they accrue for that year. Leases shall be for a period of twenty years, with the preferential right in the lessee to renew the same for successive periods of ten years upon such reasonable terms and conditions as may be prescribed by the Secretary of the Interior, unless otherwise provided by law at the time of the expiration of such periods: *Provided further*, That upon relinquishment or surrender to the United States, within six months from the date of this act, by any locator or his successors in interest of his or their claim to any unpatented oil or gas lands included in an order of withdrawal, upon which oil or gas had been discovered, was being produced, or upon which drilling operations were in actual progress January 1, 1914, and the claim to which land was initiated prior to July 3, 1910, the Secretary of the Interior may, within his discretion, lease, on such reasonable terms and conditions as he may prescribe, to such locator or his successors in interest the said lands so relinquished, not exceeding, however, the maximum area of 640 acres to any one person, association or corporation, said

leases to be conditioned upon the payment by the lessee of a royalty of not less than one-eighth of the oil or gas extracted or produced from the leased premises or the proceeds thereof, each lease to be for a period of twenty years, with the preferential right in the lessee to renew the same for succeeding periods of ten years, upon such reasonable terms and conditions as may be prescribed by the Secretary of the Interior.

Sec. 13. That rights-of-way through the public lands of the United States are hereby granted for pipe-line purposes for the transportation of oil or natural gas to any applicant possessing the qualifications provided in section one of this act to the extent of the ground occupied by the said pipe line and twenty-five feet on each side of the same under such regulations as to survey, location, application and use as may be

### A. A. G. O. GOT HIS MONEY BACK

C. E. Stoehr, McKeesport, Pa., bought goods of an Indiana concern and returned unused portion of the order as per agreement. There was a balance due him of \$6.89, which the firm insisted on his trading out. The order was entered last April and Mr. Stoehr has gone without the use of his money, (not a large amount, it is true), since that time until the A. A. G. O. took a hand in the affair, with the following result:

September, 22, 1916

A. A. G. O., Chicago.

Gentlemen:—We are this date instructing our Accounting Department to mail Mr. Stoehr a check for such credit balance as appears on our books in his favor.

Trusting that this satisfactorily closes the transaction, etc., we beg to remain,

Yours very truly,

BLANK MOTOR PARTS Co.,  
H. R. T., Mgr.

prescribed by the Secretary of the Interior, and upon the express condition that such pipe lines shall be constructed, operated and maintained as common carriers: *Provided*, That no right-of-way shall hereafter be granted over the public lands for the transportation of oil or natural gas except under and subject to the provisions, limitations and conditions of this section. That failure to comply with the provisions of this section or the regulations prescribed by the Secretary of the Interior shall be ground for forfeiture of the grant by the United States district court for the district in which the property, or some part thereof, is located in an appropriate proceeding.

### PHOSPHATES.

Sec. 14. That the Secretary of the Interior is hereby authorized to lease to any qualified applicant any deposits of phosphates or phosphate rock belonging to the United States, under such regulations and upon such terms as are herein specified, through advertisement, competitive bidding or such other methods as the Secretary of the Interior may by general regulations adopt.

Sec. 15. That each lease shall be for not to exceed 2,560 acres of land, to be described by the legal subdivisions of the public land surveys, or, if unsurveyed, to be surveyed at the expense of the lessee in accordance with the laws, rules and regulations governing the survey of placer mining claims: *Provided*, That the land embraced in any one lease shall be in compact form, the length of which shall not exceed two and one-half times its width.

Sec. 16. That for the privilege of mining or extracting the phosphates or phosphate rock covered by the lease the lessee shall pay to the United States such royalties as may be specified in the lease, which shall be fixed by the Secretary of the Interior in advance of offering the same, which shall be not less than 2 per centum of the gross value of the output of phosphates

or phosphate rock at the mine, due and payable at the end of each month succeeding that of the extraction of the phosphates or phosphate rock from the mine, and an annual rental payable at the date of such lease and annually thereafter on the area covered by such lease at such rate as may be fixed by the Secretary of the Interior prior to offering the lease, which shall be not less than 25 cents per acre for the first year thereafter, 50 cents per acre for the second, third, fourth and fifth years, respectively, and \$1 per acre for each and every year thereafter during the continuance of the lease, except that such rental for any year shall be credited against the royalties as they accrue for that year. Leases shall be for indeterminate periods upon condition of a minimum annual production, except when operation shall be interrupted by strikes, the elements or casualties not attributable to the lessee, and upon the further condition that at the end of each twenty-year period succeeding the date of the lease such readjustment of terms and conditions may be made as the Secretary of the Interior shall determine unless otherwise provided by law at the time of the expiration of such periods.

Sec. 17. That any qualified applicant to whom the Secretary of the Interior may grant a lease to develop and extract phosphates or phosphate rock under the provisions of this act shall have the right to use so much of the surface of unappropriated and unentered lands, not exceeding forty acres, as may be determined by the Secretary of the Interior to be necessary for the proper prospecting for or development, extraction, treatment and removal of such mineral deposits.

### POTASSIUM OR SODIUM.

Sec. 18. That the Secretary of the Interior is hereby authorized, under such rules and regulations as he may prescribe, to grant to any qualified applicant a prospecting permit which shall give the exclusive right to prospect for chlorides, sulphates, carbonates, borates or nitrates of potassium or sodium, or associated similar salts for a period of not exceeding two years: *Provided*, That the area to be included in such permit shall not exceed 2,560 acres of land in reasonably compact form.

Sec. 19. That upon showing to the satisfaction of the Secretary of the Interior that valuable deposits of one of the substances enumerated in section eighteen hereof have been discovered by the permittee within the area covered by his permit, the permittee shall be entitled to a patent for 640 acres of the land embraced in the prospecting permit, to be taken and described by legal subdivisions of the public land surveys, or, if the land be not surveyed, by survey executed at the cost of the permittee in accordance with rules and regulations prescribed by the Secretary of the Interior. All other lands described and embraced in such a prospecting permit, from and after the exercise of the right to patent accorded to the discoverer, and all other lands known to contain such valuable deposits as are enumerated in section eighteen hereof and not covered by permits or leases, may be leased by the Secretary of the Interior, through advertisement, competitive bidding, or such other methods as he may by general regulations adopt and in such areas as he shall fix, not exceeding 2,560 acres, all leases to be conditioned upon the payment by the lessee of such royalty as may be specified in the lease and which shall be fixed by the Secretary of the Interior in advance of offering the same and which shall not be less than 2 per centum on the gross value of the output at the point of shipment, and the payment in advance of a rental, which shall be not less than 25 cents per acre for the first year thereafter, not less than 50 cents per acre for the second, third, fourth and fifth years, respectively, and not less than \$1 per acre for each and every year thereafter during the continuance of the lease, except that such rental for any year shall be credited against the royalties as they accrue for that year. Leases shall be for indeterminate periods upon condition that at the end of each twenty-year period succeeding the date of any lease such readjustment of terms and conditions may be made as the Secretary of the Interior may determine, unless otherwise provided by law at the time of the expiration of such periods.

Sec. 20. That in addition to areas of mineral land to be included in prospecting permits or leases the Secretary of the Interior, in his discretion, may grant to a permittee or lessee under this act the right to use, during the life of the permit or lease, a tract of unoccupied land belonging to the United States, not exceeding twenty acres in area, for camp sites, refining works and other purposes connected with and necessary to the proper development and use of the deposits covered by the permit or lease.

### GENERAL PROVISIONS APPLICABLE TO COAL, PHOSPHATE, OIL, GAS, POTASSIUM OR SODIUM LEASES.

Sec. 21. That the Secretary of the Interior shall reserve and may exercise the authority to cancel any prospecting permit and shall insert

in every such permit issued under the provisions of this act appropriate provisions for its cancellation by him, upon failure by the permittee or licensee to exercise due diligence in the prosecution of the prospecting work in accordance with the terms and conditions stated in the permit.

Sec. 22. That no person, association or corporation, except as herein provided, shall take or hold more than one lease of each of the classes of deposits herein named and described during the life of such lease; no corporation shall hold any interest as a stockholder of an other corporation in more than one such lease; and no person shall take or hold any interest or interests as a member of an association or associations or as a stockholder of a corporation or corporations holding a lease under the provisions hereof which, together with the area embraced in any direct holding of a lease under this act, or which, together with any other interest or interests as a member of an association or associations or as a stockholder of a corporation or corporations holding a lease under the provisions hereof, exceeds in the aggregate an amount equivalent to the maximum number of acres allowed to any one lessee under this act; and the interests held in violation of this provision shall be forfeited to the United States by appropriate proceedings instituted by the Attorney General for that purpose in the United States district court for the district in which the property, or some part thereof, is located, except that any such ownership or interest hereby forbidden which may be acquired by descent, will, judgment, or decree may be held for two years and not longer after its acquisition.

Sec. 23. That no person, association or corporation holding a lease under the provisions of this act shall hold more than a tenth interest, direct or indirect, in any agency, corporate or otherwise, engaged in the sale or resale of coal, phosphate, oil, gas, potassium or sodium obtained from such lessee; and any violation of the provisions of this section shall be ground for the forfeiture of the lease or interest so held.

Sec. 24. That any permit, lease, occupation or use permitted under this act shall reserve to the Secretary of the Interior the right to permit for joint or several use such easements or rights-of-way upon, through or in the lands leased, occupied or used as may be necessary or appropriate to the working of the same, or of other lands containing the deposits described in this act, and the treatment and shipment of the products thereof by or under authority of the government, its lessees, or permittees, and for other public purposes: *Provided*, That said Secretary, in his discretion, in making any lease under this act may reserve to the United States the right to lease, sell or otherwise dispose of the surface of the lands embraced within such lease under existing law or laws hereafter enacted, in so far as said surface is not necessary for use of the lessee in extracting and removing the deposits therein: *Provided further*, That if such reservation is made it shall be so determined before the offering of such lease. That the said Secretary, during the life of the lease, is authorized to issue such permits for easements herein provided to be reserved.

Sec. 25. That no lease issued under the authority of this act shall be assigned or sublet, except with the consent of the Secretary of the Interior. The lessee may, in the discretion of the Secretary of the Interior, be permitted at any time to make written relinquishment of all rights under such a lease, and upon acceptance thereof be thereby relieved of all future obligations under said lease. Each lease shall contain provisions for the purpose of insuring the exercise of reasonable diligence, skill and care in the operation of said property; a provision that such rules for the safety and welfare of the miners and for the prevention of undue waste as may be prescribed by said Secretary shall be observed, including a restriction of the workday to not exceeding eight hours in any one day for underground workers except in cases of emergency, provisions securing the workmen complete freedom of purchase, requiring the payment of wages at least twice a month in lawful money of the United States, and providing proper rules and regulations to insure the fair and just weighing or measurement of the coal mined by each miner, and such other provisions as he may deem necessary for the protection of the interests of the United States, for the prevention of monopoly, and for the safeguarding of the public welfare. *Provided*, That none of such provisions shall be in conflict with the laws of the state in which the leased property is situated.

Sec. 26. That any lease issued under the provisions of this act may be forfeited and canceled by an appropriate proceeding in the United States district court for the district in which the property, or some part thereof, is located whenever the lessee fails to comply with any of the provisions of this act, of the lease, or of the general regulations promulgated under this act and in force at the date of the lease; and the lease may provide for resort to appropriate methods for the settlement of disputes or

## THREE NEW "STAR" FEATURES

**First.** Covering registered members of the *Bureau of Registration of Automobile Workers* with a Limited Indemnity Policy carrying benefits in case of Loss of Life, Limb, Sight or Time, by accidental means under certain conditions.

**Second.** Registration in IDENTIFICATION BUREAU and a key-ring tag furnished, bearing identification number recorded in this Bureau. If bearer is seriously injured away from friends this Bureau will be notified by wire immediately. If the bunch of keys to which tag is attached is lost, finder will return at once to this Bureau.

**Third.** All employers know that liability insurance under the Workmen's Compensation Laws does not become operative until *7, 10 or 14 days of actual incapacitation has passed*. This oftentimes works a hardship upon the employer as well as on the employee. In the case of an old and tried workman, the employer usually feels it a matter of policy to stand this loss out of his own pocket. This department is now in position to cover this condition, which certainly constitutes

ANOTHER TRIUMPH FOR THE A. A. G. O.  
AND B. R. A. W.

a triumph that should have a strong appeal for Employer Members as well as Registered Workers, as it is a much-needed protection for both.

for remedies for breach of specified conditions thereof.

Sec. 27. That all statements, representations or reports required by the Secretary of the Interior under this act shall be upon oath, unless otherwise specified, and in such form and upon such blanks as the Secretary of the Interior may require.

Sec. 28. That the provisions of this act shall also apply to all deposits of coal, phosphate, oil, gas, potassium or sodium in the lands of the United States which may have been or may be disposed of under laws reserving to the United States such deposits, with the right to prospect for, mine and remove the same, subject to such conditions as are or may hereafter be provided by law.

Sec. 29. That all moneys received from royalties and rentals under the provisions of this act, excepting those from Alaska, shall be paid into, reserved and appropriated as a part of the reclamation fund created by the act of Congress approved June 17, 1902, known as the reclamation act, but after use thereof in the construction of reclamation works and upon return to the reclamation fund of any such moneys in the manner provided by the reclamation act and acts amendatory thereof and supplemental thereto, 50 per centum of the amounts derived from such royalties and rentals so utilized in and returned to the reclamation fund shall be paid by the Secretary of the Treasury after the expiration of each fiscal year to the state within the boundaries of which the leased lands or deposits are or were located, said moneys to be used by such state or subdivisions thereof for the construction and maintenance of public roads or for the support of public schools or other public educational institutions, as the legislature of the state may direct: *Provided*, That any moneys which may accrue to the United States under the provisions of this act from lands within the naval petroleum reserves shall be deposited in the treasury as "miscellaneous receipts."

Sec. 30. That the Secretary of the Interior is authorized to prescribe necessary and proper rules and regulations and to do any and all things necessary to carry out and accomplish the purposes of this act: *Provided*, That nothing in this act shall be construed or held to affect the rights of the states or other local authority to exercise any rights which they may have to levy and collect taxes upon improvements, output of mines or other rights, property or assets of any lessee.

Sec. 31. That the deposits of coal, phosphate, oil, gas, potassium and sodium, herein referred to, in lands valuable for such minerals shall be subject to disposition only in the form and manner provided in this act, except as to valid

claims existent at date of the passage of this act and thereafter maintained in compliance with the laws under which initiated, which claims may be perfected under such laws.

## NEW JEFFERY SIX MAKES RECORD RUN

From Milwaukee, Wis., to Houghton, Mich., in a single day, a feat that has been tried unsuccessfully many times by many makes of cars, has just been achieved by the new Jeffery Six. The Jeffery, a brand new stock car in every respect, delivered in the ordinary routine of business the day before the start, covered the 493 miles between the two points in exactly 14 hours and 41 minutes running time, averaging 33.6 M. P. H.

The car was driven by N. E. Osmond, Milwaukee distributor of the Jeffery line. With him were three passengers, including George H. Moeller, of the Milwaukee Sentinel, who acted as official observer and timer.

The combined weight of the car's four occupants was 732 pounds, while 156 pounds of luggage was carried. From Menominee, Mich., on the car carried five passengers, E. C. Hansen, the Jeffery dealer at Houghton, joining the party there.

Gasoline consumption averaged 12½ miles to the gallon, while only half a gallon of oil was required for the whole trip. This is a most economical showing, considering the fact that the car was pushed over the road with utter disregard for fuel economy.

## Lewis G. Stevenson, Illinois Official, Friend of Motor Trade

Hon. Lewis G. Stevenson, Secretary of State, should receive the support of every Illinois motorist, garageman and auto dealer in his contest before the voters for re-election this fall. He



Mr. Stevenson

has been a consistent and persistent friend of the motorist and is a staunch advocate of the garageman's premier legislative demand, the lien law.

Secretary Stevenson, President Hayes of the Chicago Motor Club, and Secretary-Treasurer Carr of the A. A. G. O. held a conference in Chicago during the month, when plans for united action at Springfield in behalf of protective laws for honest garagemen and honest motorists were considered. Sec-

retary Stevenson is with us of the garage trade in our demands, as earnestly and uncompromisingly as he is and has been with the motor clubs and good roads organizations in their protective and constructive work.

In this connection we desire to reproduce a letter sent by Mr. Hayes to Mr. Stevenson and widely circulated in Mr. Stevenson's primary campaign. It is taken from the *Motor News*, official publication of the Chicago Motor Club, and is as follows:

I have just learned with a great deal of pleasure that you intend announcing your candidacy for nomination for Secretary of State within the next few days and I cannot help but believe that the two hundred odd thousand motorists in Illinois will rejoice with me because of the great service you have rendered to all the citizens of the state and to the motorists in particular.

As a "Safety First" advocate I congratulate you most sincerely upon the "Safety First" movement which you inaugurated, and your efforts to reduce fatal and serious accidents have met with success. Your automobile investigators are working for you and the state night and day in an effort to educate the motorists to the principles of "Safety First."

I am satisfied that the records of the coroner's office of every county in the state of Illinois will show a marked decrease in the number of fatal and serious accidents as a result of your efforts.

I doubt if there is another organization in the state of Illinois that has more to do with your office than ours, and the absence of the old haphazard methods long in vogue in that office is indeed a revelation. Indifference has been substituted with keen interest and courteous efficiency that from my experience is entirely new in a public office.

You and your employees have always manifested a personal interest in the many questions that I have raised and I have yet to make a request and not receive entire satisfaction and complete information with reference to the subject at hand.

I know from personal experience that every department under you has been reorganized and is on a thorough business basis; where it formerly was necessary for a person to go to Springfield, we are now able to secure efficient service by mail in the foreign and domestic corporation departments, the index, anti-trust and executive departments, with a result that those having business with your office have been saved a great deal of valuable time and money; and when you take into consideration the fact that the fees of the Secretary of State's office amount to over a million and a half dollars yearly, you are certainly to be commended.

*Motor News*, the official publication of the Chicago Motor Club, of which I am editor, is nonpartisan, but to remain silent at this time on a subject so vital to the motorists of Illinois I would be lacking in courage and unappreciative of the very great assistance you and your organization have been to this club and to its individual members during your term of office. I only regret that space will not permit of my going into the details of the many things you have done for the individual motorists which have resulted in a financial saving to the motorists as well as their personal safety and convenience in many of your rulings affecting the operation of a motor car.



Mr. Hayes

Besides boosting for Mr. Stevenson's re-election because of his pronounced friendship for the motoring and garage interests, the AMERICAN GARAGE AND AUTO DEALER desires to urge Chicago members of the A. A. G. O. to also cooperate with the good work of the Chicago Motor Club whenever possible, because Mr. Hayes, as well as Mr. Stevenson, has pledged his hearty cooperation in advancing the legislative interests of our garage craft when the legislature meets next January.

### CHICAGO MOTORISTS WANT A PURE GASOLINE LAW

A. C. Parker, chairman of the touring and sign-board committees of the Chicago Motor Club, has prepared figures showing that adulterated or poor quality gasoline may be costing Chicago automobilists hundreds of thousands of dollars annually. He believes an ordinance of the kind now being framed by Alderman Thomas J. Lynch of the Thirty-fifth Ward to prohibit fraudulent blending of gasoline and to compel honest certification of the grade of the product offered for sale will save motor owners the greater portion of the money now wasted for inferior fuel.

"Records of the city collector's office show," said Mr. Parker, "that from May 1 to September 25 vehicle tax licenses for 51,478 motor-driven vehicles, exclusive of motorcycles, had been issued.

Licenses are still being issued at the rate of about 100 a day.

"If the daily average gasoline consumption of these 51,478 motor vehicles is estimated at one gallon—and I believe that is conservative—the yearly consumption would amount to 18,789,470 gallons. At an average cost of 20 cents a gallon the yearly bill would be approximately \$3,750,000.

"Assuming that the gasoline, through adulteration, fraudulent or otherwise, is only 90 per cent efficient, it would mean an annual loss of \$375,000. Divided among 51,500 motorists the cost to the individual would be only about \$7. The individual loss might appear trifling, but when considered as a whole it is startling.

"By keeping a record of the mileage he gets out of a certain number of gallons, with his car in perfect running order, an owner can quickly fig-

ure out his weekly, monthly or annual loss of money through poor quality gasoline."

Members of the Chicago Motor Club and the Chicago Automobile Club have been invited by the officers of each to report personal experiences with poor quality gasoline. These reports later will be used in aiding the passage of the ordinance now in preparation by Alderman Lynch.

### STUDEBAKER FACTORY EXPANSION

The Studebaker Corporation, Detroit, Mich., has awarded contracts for construction work that will add 40,000 square feet to the floor space of the Studebaker factories. An extra floor, 50 by 300 feet, is to be added to one of the three-story buildings which is at present used as a warehouse.

# Auto Accessories *and* Garage Equipment

## UNIVERSAL TIRE CHANGER

The Weaver Universal Tire Changer is a unique device that heralds one of the greatest steps ever accomplished towards the efficient equipment of the garage and repair shop. The machine appears to be practical in every respect, and many of them are already in service throughout the country, where they are giving complete satisfaction.

methods of dismounting and mounting ordinary clincher type of tires.

Photo No. 4 shows the roller being applied to the adapter ring of the usual type of lock rim. The pressure of the roller breaks the adapter ring away from the lock ring so that the two may be readily lifted off by hand. The arm carrying the roller is rotated around the entire circumference of the rim.

further information desired regarding the tire changer will be gladly supplied by the Weaver Manufacturing Company, Springfield, Ill., who will quote price, etc.

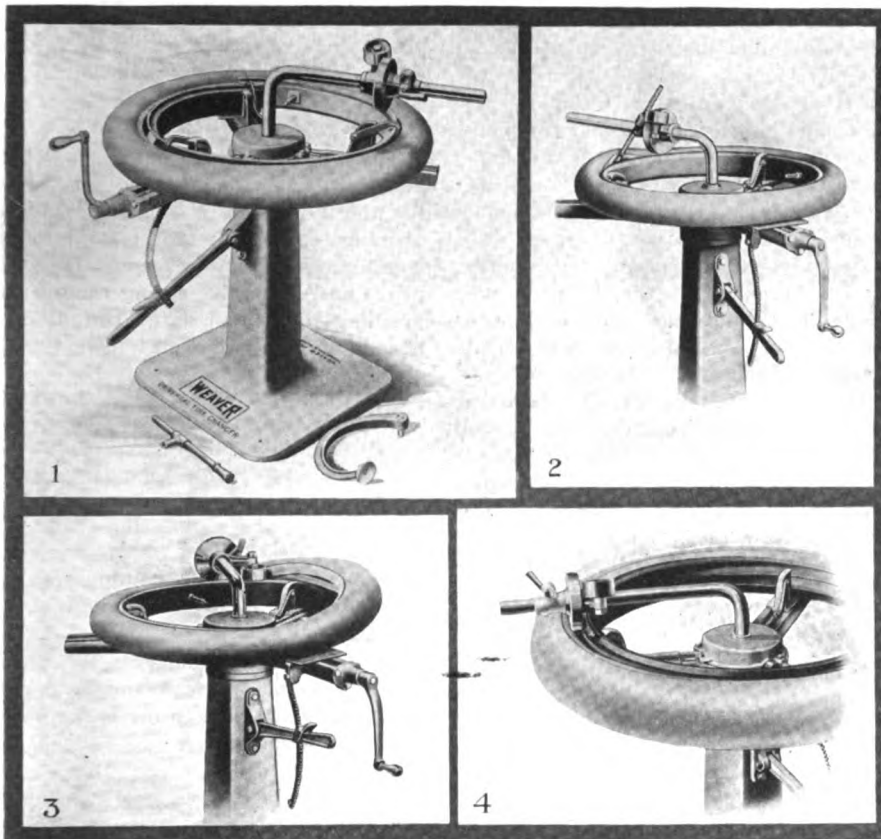
## PROTECTED HEATER FOR GAS CARS

Getting ready for the winter season means putting in a new stock of or at least securing an agency for a heater for gas cars.

The makers of the Utility Protected Heater, the Hill Pump Valve Co., Archer avenue and Canal street, Chicago, state their article keeps the car heated at comfortable temperature in coldest weather without costing a cent for maintenance. It is a radiator and footrest combined. It utilizes the hot gases from the engine exhaust. The gases, instead of being wasted, pass through the heater when it is in operation and escape into the air beneath the car. The temperature is kept at the desired point by means of a regulating valve inside the car.

The Utility Protected Heater is simple, ornamental and indestructible. It's an attractive addition to any car. It cannot get out of order. It gives off no obnoxious odors or gases, and cannot burn anything. Can be permanently installed in half an hour by drilling two small holes in floor of tonneau and one in the exhaust pipe ahead of the muffler.

The heater, heavily nickeled, sells at



A "direction sheet" giving detailed instructions for operating the machine with various types of rims is issued by the makers, as also is a circular which gives a general outline of the utility of the device. The four photographs, numbered 1, 2, 3 and 4, shown herewith, illustrate the application of the machine to three different types of rims:

No. 1 shows a split rim being contracted so as to enable the tire to be lifted off. The reader will note that this is accomplished by the toggle joint of the jaw, which is applied to the rim near the split. When a new tire is mounted the action of the jaws is reversed so that they will expand the rim and bring the latch into proper position.

Photos No. 2 and No. 3 show the

The profits in tire changes are measured by the rapidity and ease with which the changes can be made.

One difficult tire will frequently require from one to two hours labor of two men—and thus consume the profits on a dozen normal "changes" where this service is charged for at a set price "per change."

Where tires are changed gratis as a feature of "service" to customers there is all the more reason to install this equipment for performing the changes with the least possible waste of time and labor.

This is a device that is sure to enlist the keen interest of every garage and shop man who has to do with the changing of tires, and we are publishing this article for his benefit. Any

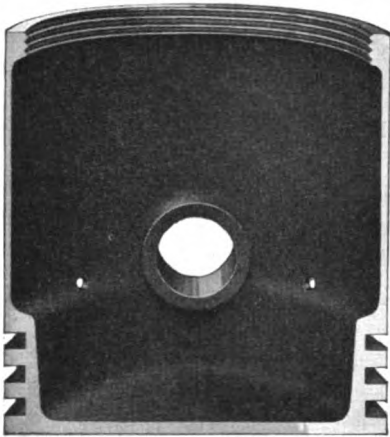


\$15, together with attachments, and \$7.50 for the Junior for Ford cars. In ordering sample state outside diameter of exhaust pipe before it enters muffler.

### A SEMI-STEEL PISTON

Allen & Curtiss Company, Mishawaka, Ind., are now putting on the market the semi-steel piston, illustrated herewith.

They have patterns on hand for over one thousand different piston castings,



and are able to fill any order for any special piston on short notice.

They do not make pistons for automobile manufacturers, but for repair work only and therefore cater especially to garagemen and auto shop men.

### A NEW UNION SERVICE FOR ANTI-FRICTION BEARINGS

Announcement is made of the organization of the Bearing Service Company. This company, which will have its general offices in Detroit, has been established to handle the service for anti-friction bearings for all types of motor vehicles and already has contracted with the Timken Roller Bearing Company, the Hyatt Roller Bearing Company and the New Departure Manufacturing Company to conduct the service operations of these, the leading makers of anti-friction bearings in the United States.

The Bearing Service Company in reality takes over the service operations of these three companies. The idea is similar to that of the union railway stations where competing lines enter a city. Instead of as many stations as there are lines, or, in this case, as there are companies, one central station cares for this work for all.

It is pointed out that the Bearing Service Company is entirely separate from the companies whose products it will handle.

It is interesting to note that the automobile business, which has been the forerunner of progress in many industrial lines, has taken the initiative in this new move—a union of competitors so their service to the public may be more far-reaching and effective.

The Hyatt Company now maintains service branches in the principal auto-

mobile centers in the country and the Timken Company has several such branches. These branches all will be taken over by the new company. The new Union Service Stations of their company will have ground-floor locations and will carry complete stocks of ball, taper roller and flexible roller bearings for automobiles, motor trucks, farm tractors and motorcycles.

It is the plan to eventually establish union stations in 50 or more automobile centers, thereby placing this service within easy reach of every automobile owner.

The general offices of the Bearing Service Company already have been opened at Woodward and Warren avenues, in the center of Detroit's retail automobile district.

A. K. Hebner, service supervisor of the Hyatt Roller Bearing Company, relinquished his duties with that company September 1 to become general manager of the Bearings Service Company. Mr. Hebner has had long experience in service work and for the past two years has been in charge of the many service branches of the Hyatt Company throughout the United States. Mr. Hebner's headquarters will be at the general offices at Detroit.

The first stations of the Bearing Service Company will be in full operation by October 1, perhaps before, in the following cities: Atlanta, Boston, Chicago, Detroit, Los Angeles, Minneapolis, New York, San Francisco and Seattle.

"Judging from my experience in service work and the greatly increased field for service operations which this new union station idea opens," said Mr. Hebner, "I can see where we will require at least fifty branches in the near future. These will be established in various cities as soon as we can complete our plans."

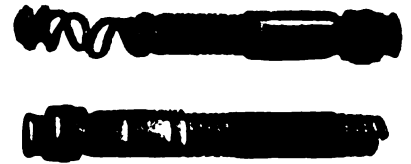
### KELLY-SPRINGFIELD GOES TO CUMBERLAND

It has been definitely decided to locate the new Kelly-Springfield Tire Company's factory at Cumberland, Md. The tire company is to receive a bonus of \$750,000 from the citizens of Cumberland and seventy-five acres of land, extending the city limits to include the proposed factory site. Police and fire protection will be furnished and the taxes remitted for a term of years.

The Union Motor Device Co., of Indianapolis, will hereafter be known as the Permalite Corporation. Its capital stock has been increased from \$20,000 to \$100,000. This concern manufactures storage batteries for automobiles and garages and is enterprising and successful.

### SPEEDOMETER SHAFT REPAIR

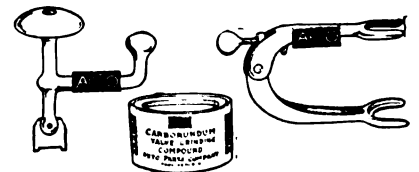
The Speedometer Repair Company, 1303 West Jackson boulevard, Chicago, has a quite marvelous process of repairing flexible speedometer shafts—something really new. No solder is



used, as this destroys the flexibility of the shaft, but a crimped steel ferrule is attached in such a way that it holds the broken ends together and yet gives the shaft the same flexibility as before being broken. The illustration shows the shaft before and after repairing.

### NEW APCO SPECIALTIES

The Auto Parts Company, Providence, R. I., maker of Apco specialties for the Ford car, is offering a valve grinding equipment that is said to be complete in every respect. It comprises an Apco valve spring remover, a grinding tool and a large can of carborundum, which is well known for its



abrasive action. The combination of three articles is to be retailed at 60 cents.

Another new specialty is the Apco clutch control. It is a simple device that can be attached to the brake pedal in a few minutes with a screw driver and a wrench, and with it the operation of the service brake throws the clutch in neutral. This prevents the brake working against the motor, thereby effecting a saving of the brake lining. The device is of particular service to the new driver as well as a convenience to the expert. It sells for 30 cents.



Geo. Q. Hill, president of the Hill-Smith Metal Goods Co., Boston, will address the auto accessories section of the convention of the National Hardware Mfg. Ass'n at Atlantic City, Oct. 19, on "Should Quality Determine Price?"

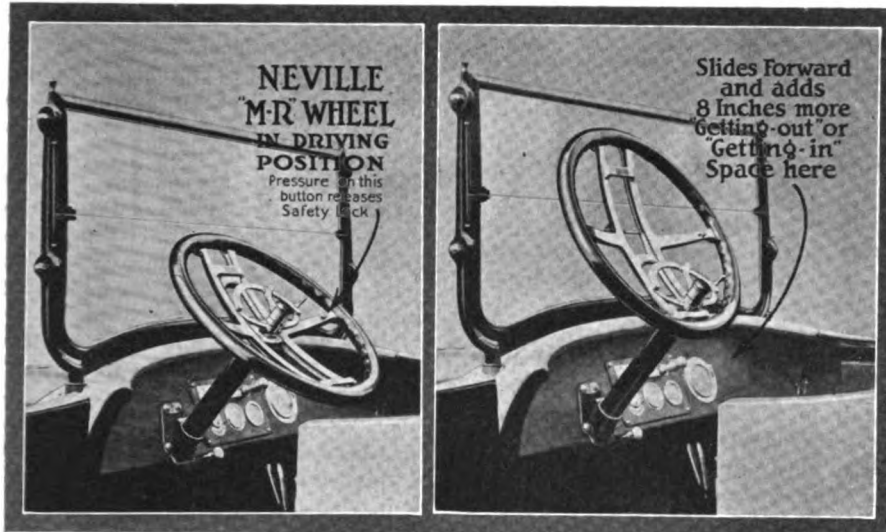


## Neville More-Room Steering Wheel with Thief Lock

The increasing popularity of the Neville More-Room Steering Wheel is giving daily evidence of the fact that car owners are paying close attention to refinements and even going out of the way to buy them with their own good

wheel forward and the driver does not have to twist or squirm or climb over the other passenger in the front seat to get in or out as with the old style standard wheel.

Eight inches more room at this pre-



money, when they are not supplied by the car manufacturers. The principal advantage of the Neville More-Room Steering Wheel is that by merely pressing a button, a lock which holds the wheel perfectly rigid, while driving, is released and the wheel pushed forward giving eight inches more room for getting in or out of the car.

This wheel is made in sizes to fit almost any car and in two styles. The polished aluminum center wheel with mahogany rim, which sells for slightly more than the plain malleable iron wheel finished in black, is becoming more popular every day with drivers of all makes of cars. Both styles operate alike.

As the illustration shows, there is no complex mechanism to get out of fix or need adjusting. The locking device is exceedingly simple, a slight pressure of the button on one of the spokes of the wheels releases the lock. Push the

### TRAINING MECHANICS

The Machinists' Training School, 140 East Fort street, Detroit, started business March 1, 1916, to train auto mechanics. Their present equipment consists of twenty machines—lathes, drill presses, screw machines, milling machines and shapers. They have four classes a day of four hours each, and can accommodate eighty students in the four shifts. The course lasts for the period of one hundred hours, or twenty-five days.

It is stated that the heads of this institution hand out no bunk, hence they do not claim to make finished mechanics out of men, or secure them

cise point is worth a million dollars as far as ease of getting in or out of the machine is concerned. The advantages of such a device are being recognized by all users of enclosed cars due to the usual cramped space and the awkwardness experienced in climbing over the other fellow in the front seat. Due to a great extent to the increased number of enclosed cars that are being purchased this year the Neville More-Room Steering Wheel Company has had to increase their production facilities to take care of the demand for their product.

A special Neville More-Room Wheel for Ford automobiles has a thief proof lock attachment, which locks the wheel when the car is not in use, absolutely preventing steering of the car. A steering wheel with the thief proof lock is also made for Ford cars without the more room feature.

positions—but up to the present time over three hundred students have graduated and, so far as they can learn, all have very good positions. The M. T. S. has been a success from the start and has now secured larger quarters. They are planning to double their business for the Fall term. The complete course costs \$50.00.

### FREE WINDOW SIGNS OF CARS

The Meyercord Company, Chicago, Ill., are making Decalcomania Transfer Window Signs for all of the leading automobile manufacturers, and we suggest that garage owners write their manufacturers for signs like these

which would enable them to put on their windows in a manner better than a hand-painted sign the trade-mark and insignia of cars which they handle.

### THE SU-DIG SERIES PLUG

A special double electrode plug, made to operate in series with the regular single spark plug, thereby producing greater power in both "T" head and "L" head engines, by causing two simultaneous sparks in each cylinder.



It is wired in series with the ordinary spark plug. Instead of having one grounded electrode, this plug has two electrodes, both of which are insulated; the top of the plug has a terminal connected to each electrode.

By connecting one of the terminals of the Su-Dig Plug with a piece of high tension wire to the magneto or battery, and the other terminal to the regular spark plug, the current is made to pass through the two plugs in series, the spark occurring in both plugs simultaneously.

Tests have been made with these plugs installed that show 20 per cent gain in power, and decided mileage increase, in addition to greatly reduced necessity for gear shifting on hills.

The Su-Dig Series Plug is manufactured by the Superior Motor Power Company, 30 Irving Place, New York.

### A HELP-MEET TRAILER

The Rochester Trailer Co., Inc., East Rochester, N. Y., have brought out an auto trailer that is a fit companion to an automobile. It is equipped with springs, automobile wheels carrying pneumatic tires, and this makes a trailer that will not only transport fragile material, but rides smooth enough to carry passengers. It is a trailer car that backs and tracks; therefore, it is in a class by itself. Send for booklet entitled "The Motor-Car Help-Meet."

### A JACK THAT WILL SELL

The Peteler Auto Jack was designed to eliminate the objectionable features of all other jacks—"and it does," says its makers.

It is declared to incorporate constructional advances peculiar to itself



that make it the most serviceable jack on the market. It is the embodiment of the three jack essentials—strength, simplicity and power.

Guaranteed to lift 2,000 lbs. Works enclosed so dust and dirt are excluded. No ratchet wheels, cotter pins and fine

adjustments. Sells at \$3.50 retail. Liberal profit for the garageman and dealer.

#### SPECIAL FEATURES

**MATERIAL**—Steel throughout—pressed and hardened.

**LIFTING BAR**—Round swivel type. Turns freely and drops automatically when weight of car is removed.

**BASE**—Heavy pressed steel shell into which is fitted a reinforcing block of wood. Will not bend or break.

**BEARINGS**—Lifting pawls and bushings are of hardened steel.

**FINISH**—Baked black enamel and nickel.

**EASY LIFTING**—The heaviest pleasure cars are easily lifted.

**DURABILITY**—Our tests prove that the Peteler will endure ordinary use indefinitely.

### ANDERSON STEAM VULCANIZER

This is something rather new in the vulcanizing line and will interest garage and shop men who need efficient equipment of this character.

The Anderson, complete with tools, sells at \$125, and will take care of ordinary repairs on all tires ranging in size from a 1½-inch bicycle tire to a 37x5-inch auto tire. It is said to be able to turn out \$120 worth of work a day. It has a capacity of three casings and four tubes at a time.

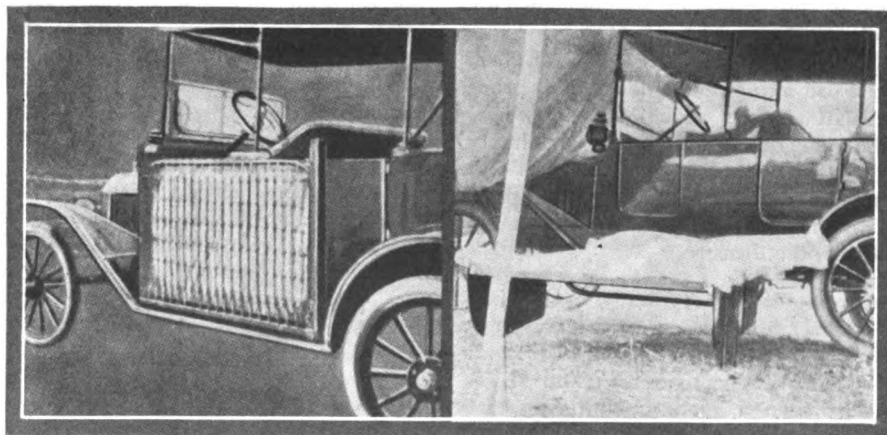
For complete particulars, write the Anderson Steam Vulcanizing Company, Worthington, Ind., mentioning this journal.

### A Tourist Campers' Bed

The Tourist Auto Equipment Co., of Dahlgren, Ill., have on the market one of the most complete equipments for automobile tourists and campers in the form of a folding camp bed for attaching to the running board of a car and which, when folded up for travel-

It can be attached to any Ford car in five minutes without an extra bolt or hole as the four bolts which bolt the fenders to the running board also bolt the Campers' Bed to the car.

When camping, the bed is never removed from the car but simply and



ing on the road this device forms a tent, bedding and luggage carrier on the running board of the car in the most convenient and accessible place.

This device makes a roomy and comfortable bed for two people, only weighs fifty pounds and can be attached to any car with a running board as long as a Ford running board in a few minutes' time and without injury to the car.

easily unfolds in a jiffy and with a small tent for one side of the car you are right at home any where you care to stop.

This equipment is manufactured exclusively by the Tourist Auto Equipment Co., Dahlgren, Ill., who are making shipments promptly on receipt of orders. Garage men and dealers should send for proposition. Single beds are quoted at \$20.00 f. o. b. factory.

Moreau & Pratt, Inc., 1834 Broadway, New York, are the sole licensees, to whom our readers should write for proposition.

### FLUXINE

Krembs & Co., 173 North Green street, Chicago, Ill., are marketing a product called "Fluxine," which is finding a hearty welcome in garages and shops where an ideal flux is needed in the metallurgical operation of brazing. For making perfect, strong joints at a low cost, Fluxine is said to be superior to any flux hitherto used.

This firm also are finding a ready market for "Pyrolute," said to be a very superior fire paint. It prevents the flux and spelter from adhering to metal and is used in open fire and liquid brazing.

It will be worth while if our readers interested in this branch of mechanical work will send for a little booklet entitled, "Points on Brazing," issued by the Krembs company. In another part of this issue they have an advertisement.

### WHY SHOCK ABSORBERS ARE INDISPENSABLE TO EASY RIDING EFFICIENCY

The ordinary leaf spring used on automobiles cannot vibrate rapidly. Their capacity for vibration is about one-twentieth of the coil spring.

Leaf springs have not the ability to recover, when a rapid succession of vibrations is encountered. The second and third shocks are upon them before they have recovered from the first.

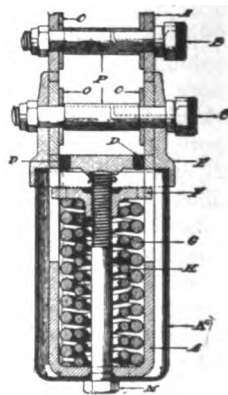
The result is confusion and practicable uselessness as an absorber of jolts and jars, and this condition is aggravated by the over-strength of the springs.

When an engineer designs an automobile spring, he must consider the maximum load which that spring will likely be called upon to carry.

With a five-passenger car, for instance, the engineer must anticipate the springs carrying nine or ten passengers at times, and build the springs accordingly.

The rebound is in direct proportion to depression of the main or leaf spring—if there is no great depression there can be no snappy rebound.

As previously explained, the leaf spring is built to carry a load about equal to twice the regular capacity of



the car. Its elastic duty is reduced about 90 per cent by Stone Absorbers. So there can be no appreciable depression of the leaf spring, and consequently no snappy rebound.

A cross section of Stone Absorber, showing construction details, is given above.

"F" is the adjustment block which either compresses or allows expansion of the coil springs "G" and "H" by turning of the adjustment bolt "M." Please note accessibility of adjustment bolt.

On October 15th the retail price on Stone Absorbers will advance from \$10.00 to \$12.00 per pair. It might be well for garagemen and dealers to order before the new price becomes effective, as the Stone is a popular seller, giving as good service as those costing from two to four times as much.

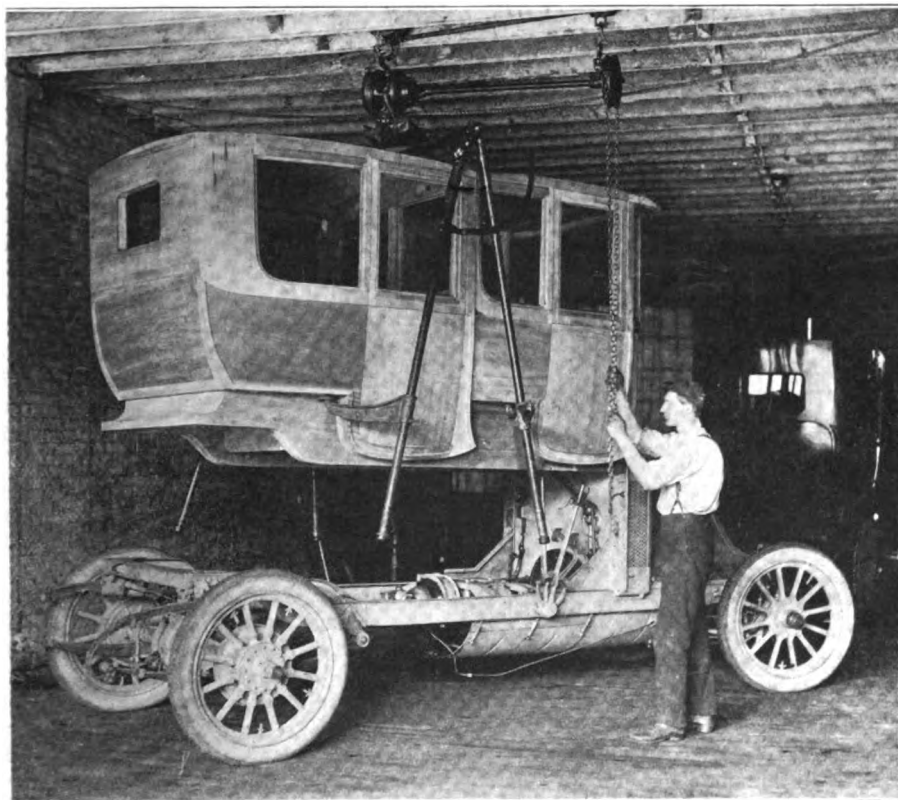
### "A SQUARE LIST MEANS SQUARE PRICES"

J. E. Duffield, of the Brunswick-Balke-Collender Co., has made the above statement in relation to that company's new tire list and its policy of marketing tires. Here is his message in brief:

"Sell your friends at list price only. This may seem to you a rather odd statement, but the poorest customers that you will have on your books are your friends.

"The easiest way around the question of concession to friends and consumers who are looking for a cut price," continued Mr. Duffield, "is to state to them, You are using a Square List, with a definite mileage guarantee, and that in maintaining the list to them, you are merely doing what they in their own line of business are trying to do with their merchandise."

## Economy Body Lock and Cradle



This simple device when attached to a car makes the interchange of the pleasure body and a commercial body an easier matter than was ever dreamed it could be. A trigger at the back releases the body from the frame and two men can make the change in just a few moments' time. On the other hand, when either body is on the frame this device locks it in place more rigidly and more safely than when bolted on. It will not loosen nor shift under the most severe conditions.

Mr. Garageman, every car owner in your neighborhood who wants to use his car commercially is a prospective buyer of this lock. Why not get an agency at once? The retail price is \$35.00.

The Economy Cradle shown in the illustration works very similar to a pair of ice tongs and is equipped with a cable and winch so that one man can change the bodies of his car all alone and do the work quickly and easily without disfiguring the car in the least.

While this cradle is not absolutely necessary, it is a great convenience for one man when he is alone and has no one to help him change the bodies.

Price of cradle.....\$40.00  
Price of winch..... 7.00  
Two single blocks, 75c each.... 1.50  
30 feet of ¼-inch steel cable.... 1.25  
Two trucks for receiving removed

bodies, \$4.00 each..... 8.00  
All prices quoted are f. o. b. Chicago, Ill.

For service or resale to car owners these devices are worth while. Address Economy Body Lock & Cradle Company, 85 Dearborn street, Chicago, for proposition.

### AUTO PEDAL NEVERSLIP PADS

Among the many safety devices for autoists, these never slip pads, made by the Geo. H. Rives Manufacturing Com-



pany, Inc., 2187 Woolworth building, New York, are of the first class. They are of pure live rubber, highly resilient and adhesive, so when attached to the pedal the foot of the operator cannot slip. In addition to

preventing the foot from slipping, thus avoiding accidents in the management of a car, these pedal pads act as foot cushions or rests, and as rubber is a non-conductor of heat, they are splendid "foot coolers" for the warm weather. They also prevent wear on the soles of the driver's shoes.

The pads are easily and quickly adjusted.

They are made in seven models, adaptable to all cars. The makers are offering special inducements to jobbers and dealers. Write.

### REPLACEMENT SPRINGS

It has often been said that the biggest thing in the automobile industry is the replacement business. The car owner buys a car, then he buys parts and accessories during the entire life of the car; and, as car owners are multiplying by the millions, the replacement business is becoming phenomenal.

Here is where the garageman and repairman come in, and it is up to him to find sources of supply that will give him good goods at right prices; parts and equipment that will make the car even better than it was before.

Springs for replacement alone constitute a big business, and the Garden

City Spring Works, 2400 Archer avenue, Chicago, are experts in this line. They are well equipped for the production of all kinds of springs of superior quality, fitting any car. Their goods are not used as substitutes, because they are not in that grade or class. Their engineers and mechanics are the best; indeed, they are experts. If you have a customer whose car rides hard and uncomfortable, consult the Garden City people, mentioning this journal, and special attention will be given to your request.

### NEW HY-WATT ELECTRIC BATTERY

Developments in batteries other than storage have been comparatively rare in the last few years. For this reason, the trade should be interested in the announcement of the Cleveland Battery & Electric Company, 1974 E. 66th street, Cleveland, O., in its entirely new type Hy-Watt Electric battery. Before entering into a detailed description, we will say briefly that this new producer of electrical current may be said to be half way between the dry cell and the storage battery. It is not as dry as the ordinary dry cell, which has about 9 per cent moisture in the filling, while this has approximately 14 per cent, and it is not a storage battery. It is not so much a change in materials which enter into it as it is the form in which they are combined.

A scientific study of an arrangement by which all of the materials entering into the construction could be utilized

for current was made, and as a result, the Hy-Watt batteries are rectangular in shape instead of cylindrical as in the ordinary dry cells. It is not sold as individual cells, but is always in a compact unit forming batteries of different capacities, there being but two terminals as shown by the accompanying illustration, even when the battery has several cells.

The carbon and the zinc of these batteries do not form part of the containing vessel and therefore can be used completely without destruction of the battery itself. The arrangement of the zinc is in the form of corrugated sheets in intimate contact with the semi-wet materials of the battery in thin layers as shown by the accompanying sectional view. By this arrangement, more surface is in contact, a very much larger electrical output is obtained, and as all the materials may be used, longer life results.

Some of the features of the battery, as stated by the makers, are as follows: Longer life, more power, higher current, and only two points of connection up to 12 volts. Being rectangular they are very compact and are light in weight as compared to other batteries; are waterproof; can be operated after being submerged for weeks or after being left in snow, or frozen in the ice for as long as 72 hours, without lowering their efficiency. The rectangular shape permits them to fit without waste of space, requiring no wedging to hold them and keep them from rattling.

The Hy-Watt battery has a capacity of 50 amperes or greater at 3,  $4\frac{1}{2}$ , 6,  $7\frac{1}{2}$  and 12 volts per battery. If one desires amperes instead of volts, combinations can be had which will deliver as high as 350 amperes at only  $1\frac{1}{2}$  volts. For special service, they may be fitted



with two binding posts at each end, delivering different voltage and amperage, as the work may demand.

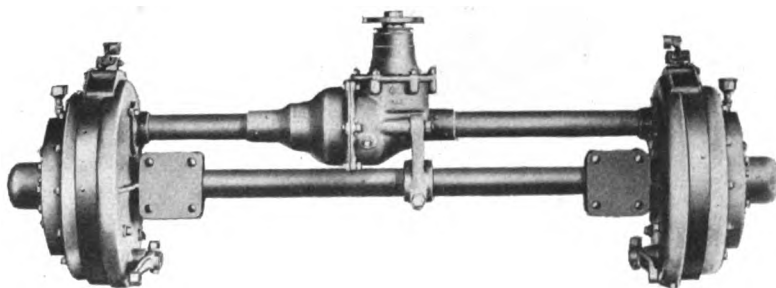
Batteries measure  $4\frac{1}{2}$  inches wide by  $6\frac{1}{2}$  inches high, no matter what voltage they are, up to 12 volts. The thickness varies as follows: 3 volts— $2\frac{5}{8}$  in. thick;  $4\frac{1}{2}$  volts— $3\frac{5}{8}$  in. thick; 6 volts— $4\frac{5}{8}$  in. thick, this size being especially adapted for automobile horns and tail lighting. The  $7\frac{1}{2}$  volts is  $5\frac{5}{8}$  in. thick for tail and side lights and automobile and engine starting ignition; 9 volts,  $6\frac{5}{8}$  in. thick; and 12 volts  $8\frac{5}{8}$  in. thick; although the guarantee is only 50.

The makers give the average amperes of the Hy-Watt batteries for the five weeks, ending July 27,  $71\frac{1}{2}$ . This shows twice the energy of the ordinary round dry cell, and about half that of the storage battery. A length of life more than twice that of the ordinary round dry cell is claimed and 50 per cent more heat in the spark. The batteries are recommended for ignition purposes for starting, especially in winter, when the storage batteries are still cold, and of course where the storage battery may not be fully charged or is run down.

In other words, the Hy-Watt is recommended as an auxiliary to the storage battery. The batteries are put up in a stout metal container, and are capable of partially a limitless number of combinations.

For example, the battery can be had to deliver  $1\frac{1}{2}$  volts and 50 amperes, or 3 volts and 50 amperes, or  $1\frac{1}{2}$  volts and 420 amperes, or 6 volts and 380 amperes, depending upon the connec-

## Gear Makes Ford Truck



One of the most spectacular features of the motor car industry has been the development of the business of converting pleasure cars into trucks. W. F. Hudson, of Philadelphia, for several years was a dealer in specialties for Ford cars. His experience in Ford parts had convinced him that the chassis of a Ford will outlast the body, fenders, rear axle and propeller shaft, and that the transmission and engine of a Ford car will pull any load from one to two tons with ease.

All that he had to do was to extend the frame so as to allow sufficient body to be carried for truckage purposes—

then strengthening the rear end with heavier springs and wheels, he only required to complete his unit an efficient shaft driven axle with propeller shaft connecting it up to the transmission.

Seeing an advertisement of the Russell internal gear drive axle, he came to Detroit. The Russell Co. got him in touch with Cecil Hamlin Taylor, the automobile engineer, who drew up a design for him, and in February, 1915, his unit, called the "Hudford," was attached to a brand new Ford chassis and shipped to him at Philadelphia. This car is still doing business as a one-ton truck over the cobble stones of Philadelphia.

tions inside and the number of cells within one container. There are only two terminals to be looked after.

The method of merchandising Hy-Watt batteries is to appoint representatives, presumably garagemen and accessory dealers, allowing a liberal discount (running as high in certain instances as 40 per cent from the list), making the dealer responsible for his territory, and paying him commission on all goods sold within that territory, whether sold by him individually, or not. The batteries list as follows:

No. 2 (3 volts)	\$1.50
No. 3 (4½ volts)	2.25
No. 4 (6 volts)	3.00
No. 5 (7½ volts)	3.75
No. 6 (9 volts)	4.50
No. 8 (12 volts)	6.00

Discounts to the trade are liberal, and as mentioned, special discounts are arranged for with those representing the battery in definite territory.

### AN OIL AND GREASE DISPLAY STAND

This novel stand is for the display of Crew Levick Motor Oils and Greases. It is attractively finished in red and



black enamel. The oil compartment holds four 4-oz. sample bottles; A, B, C and D. It is so constructed that it swings between the two arms at touch. It can be turned up and down to show the body and color of the oils.

The base holds the three greases requisite for the complete lubrication of a car. Gear Compound, Cup Grease and Spring Grease are each in a glass jar. These have screw tops so that the greases may be more closely examined. Both bottles and jars are neatly labeled. The stand is a business-getting addition to any counter or show-window.

This silent salesman is one of the many helps given to garagemen who stock the Crew Levick products for the automobile. The latter include Mistokleen and Grease-in-Tubes.

### THE NEW HYTORK BATTERY

While there are many features connected with the general construction of the new "Hytork" starting and lighting battery, the manufacturer's claim for superiority is based on the remarkable plate used in this battery.



The highest class of materials that can be obtained are used in the construction of these plates. The grids are composed of antimonial pig lead, the same as any other lead pasted plate battery. The composition of the "active material" that is pasted into these grids is the secret of the success of this remarkable battery.

Their salesmen make a rather unique demonstration when calling on the service station owner, who realizes the important function the plate has to perform in the starting battery of today. They first inform him that all lead plate storage battery manufacturers are confined to the use of antimonial pig lead in the construction of their grids. They then take a "Hytork" plate and bend it until the grid breaks without disturbing the "active material."

This is what they term a break-down test and clearly demonstrates the fact that in as much as all lead plate battery manufacturers are confined to the use of pig lead and antimony for their grids, they are making as good a battery as can be produced.

The "Hytork" is manufactured by the Heissler Storage Battery Company, pioneers in this industry.

They are at the present time selecting garages for service stations and have a very liberal agreement to offer, including territorial rights.

Sell the best accessories and supplies and get good prices. The cheap-John idea may win out in some lines—mighty few—but it won't go in this one.

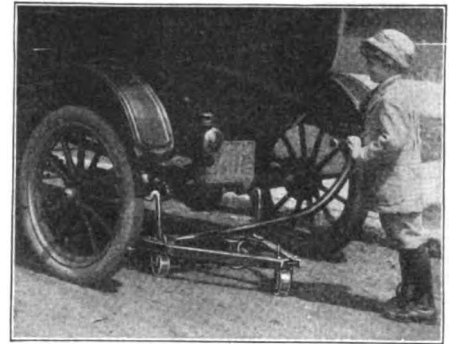
The National Association of Retail Druggists, in its annual convention held in Indianapolis recently, again strongly reaffirmed its position in favor of price protection in the interest of a standard and assured profit for the retailer.

### WHITNEY FACTORY ENLARGES

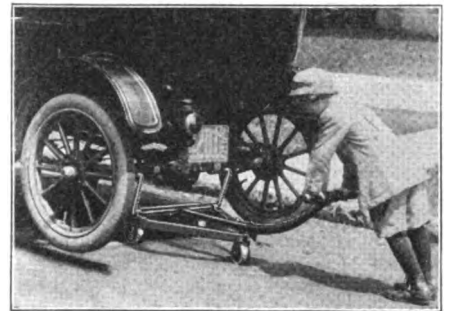
The Whitney Mfg. Co., Hartford, Conn., are enlarging their factory by erecting a new building 4 stories high, 60x120 feet in dimensions, and of the same construction as their other buildings. Growing demand for this company's product compels plant expansion.

### "QUICK EASY" JACK TRUCK

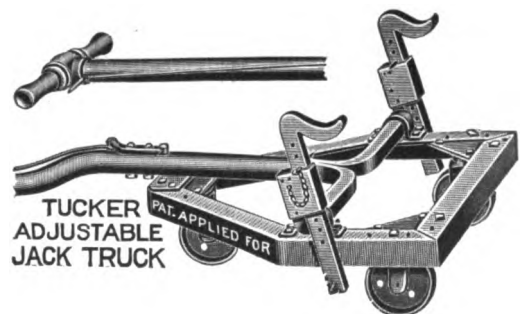
This is a new jack truck that has just been gotten ready for the market. The



two cuts below show the jack truck for Ford cars in action. In the first the truck is in position, and in the second it has the car hoisted. The third cut shows an adjustable model suitable for all cars. Every garage should have



one for use in handling customers' cars, and he should have an agency and be in a position to supply the car-owner.

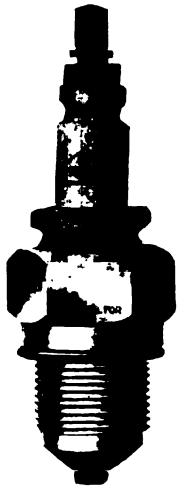


The retail selling price of the truck jack is \$15 f. o. b. Chicago. Full particulars can be obtained by writing the Bone & Tucker Company, P. O. Box 293, Chicago.



### THE NEW "OXY-IGNITOR" SPARK PLUG

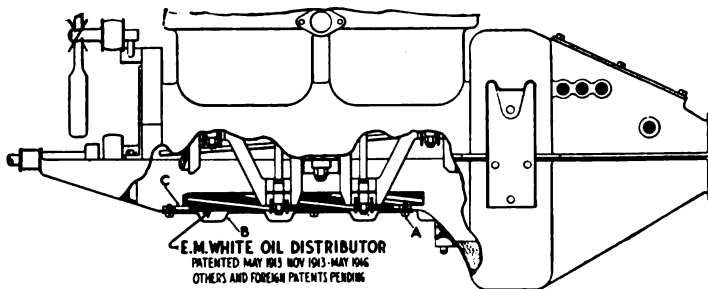
The Oxygenerator Company has purchased the patent papers and exclusive manufacturing rights of what formerly was known as the "O-G" spark plug. Minor improvements have been made by C. B. Olson, president and efficiency engineer. The name will be changed to the "Oxy-Ignitor."



Exhaustive tests have been made under most trying circumstances in many cars, and the plug is now guaranteed absolutely sootless and for the entire life of the engine. The plug may be taken apart readily and all parts are replaceable. In this plug the porcelain is enclosed by the shell and the electrode terminates in four points so that one or all spark at the same time.

### EVAPCO GAS SAVER, WHITE'S OIL DISTRIBUTOR AND JIFFY STARTER

Owing to their tremendous increase in business the Evapco Manufacturing Company, 427 Grand River avenue, Detroit, Mich., have found it necessary to completely reorganize their sales department. They have secured Kirk Taylor, who formerly was assistant



manager for the New Era Spring & Specialty Company of this city, to take the position of sales and advertising manager.

Mr. Taylor has been with the New Era Company for the past two years and has been in close touch with the automobile accessory jobbers, both local and national, during that period. The Evapco Manufacturing Company are going to confine themselves in the future to selling bona fide jobbers and Mr. Taylor is well equipped to promote their business along these lines. Besides handling the sales and advertising for the Evapco Manufacturing Company, Mr. Taylor will also assume charge of the Jiffy Starter advertising, which concern has been incorporated

with the Evapco Manufacturing Company.

The Evapco Manufacturing Company are offering two products—both valuable money-saving accessories, sold on thirty days' trial and money refunded if not satisfactory. The Evapco Gas Saver, at \$5.00, is a device which, when attached to the manifold of any car, will increase the car's power and speed, prevent formation of carbon in the cylinders, and will save 15 to 75 per cent of the gasoline. The White's Oil Distributor for Ford cars is the other device which, when attached to the crank case, produces perfect lubrication. This will actually save 25 to 100 per cent of a gallon of oil, prevent fouling of spark plugs, improve the running qualities of the motor and will practically stop overheating of the motor. This overheating is especially evidenced in the boiling over of the radiator, excessively hot footboards and other such annoyances that spoil the pleasure of motoring.

The Jiffy Starter for Ford cars, which is also being manufactured by this concern, is a mechanical starter selling at \$10.00 (ten dollars) that is giving absolute satisfaction to thousands of Ford owners from Portland to Portland. The publicity campaign on Jiffy Starters is at the present very much reduced on account of unprecedented sales having taxed production ability to the limit. While the Evapco Manufacturing Company are going to distribute their product exclusively through the legitimate jobbers, they will welcome

correspondence with dealers and garage men who are interested in either the Evapco Gas Saver or White's Oil Distributor. Complete information with circulars will be furnished at once and actual figures will be given on the accomplishments of the Evapco Gas Saver on any particular car inquired for. Orders sent direct will be cared for immediately, either direct or referred to the nearest jobber who is carrying a stock.

In spite of the shortage of raw material the Evapco Manufacturing Company are in a position to take care of all orders promptly, as they have just recently trebled their production to take care of their greatly increased business.

### A PRACTICAL SELF-LUBRICATING SPRING FOR AUTOMOBILES

The Lyon Self-Lubricating Spring has been on the market for over a year and has been thoroughly tested by actual use on all makes of cars. Garage-



men throughout the U. S. and in many foreign countries are now replacing the broken springs on cars with Lyon Self-Lubricating Springs, and automobile owners are insisting upon the increased service and riding comfort of a lubricated spring. Lubrication is the only means on earth of preventing rust and squeak.



Spring engineers have been experimenting for a number of years with various kinds of lubricants and have had the best results with light cylinder oil. Numerous devices have been placed on the market recently and have been used with moderate success, but automobile owners are loth to be bothered with these attachments, nor will they stop to separate the leaves in order to apply oil or other lubricant to the friction surfaces of the leaves. Consequently, their springs rust, squeak and break after the steel has become deadened from constant friction to the point of not being able to withstand the constant strain and road-shock.

Lyon Self-Lubricating Springs are designed to use light cylinder oil. A concavity near the end of each leaf holds a felt pad, which serves as an oil retainer. This pad holds sufficient oil to properly lubricate the spring for about three thousand miles running. Oil is reapplied with an ordinary oiling can through a small duct from the end of the leaf. It is interesting to note how the oil finds its way from the oil pad throughout the entire length of the leaves. In position, there is just a little pressure on the pad; this normal pressure is constantly being relieved

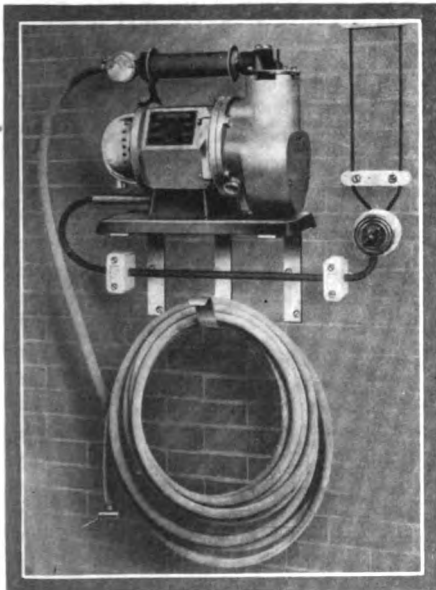
and reapplied while the car is running, thus imparting a sort of sponge action to the pad. Very little oil is forced to the outer surface of the pad and this is taken up by the leaves throughout their entire length by capillary attraction. Lubrication is positive.

Lyon Spring and Axle Service is unexcelled. This company carries in stock for immediate delivery over 400 different numbers of springs. The small dealer and garage owner who carry no springs in stock will find this service valuable. The current catalog of The Edward F. Lyon Co. is a handy reference and guide for the repair and service departments. It contains a stock of valuable information that can be had from no other single source.

### THE LECTROFLATER

The Black & Decker Manufacturing Company, Baltimore, Md., have recently brought out a new model Lectroflater known as Type B, embodying a number of improvements on the pioneer tire inflating machine brought out by them about a year ago.

The Lectroflater is an ingenious combination of a universal electric motor that will run on either alternating or direct current, a high pressure air compressor, a gear box and a condensing chamber so arranged that all elements are enclosed in a single housing, and are automatically cooled by a patented cooling system, that requires no liquid of any kind.



All bearings, gears and piston are automatically lubricated from a central source by the capillary system, there being no liquid lubricant or oil level to maintain, consequently, there can be no flooding and it is impossible for any oily vapor to get into the tires and rot them out.

The Lectroflater is very neat in ap-

pearance, light in weight and is fitted with a long electric cord, high pressure gauge, hose and quick-acting coupling. It will run from any lamp socket and will pump any size tire to required pressure in a very short time. It eliminates the necessity for storage tanks, stationary compressors and heavy truck outfits around the garage.

No. 1 size lists at \$45.00 and is particularly suited to private garages. No.



2 lists at \$65.00, has  $2\frac{1}{2}$  times the capacity of No. 1, and is intended for public garages, tire sales rooms, etc., as it will take care of the heaviest demands for air.

These machines are also furnished for mounting permanently on the wall and in this case have short electrical connections and very long hose, that can be hung on a hook when not in use.

The No. 2 Lectroflater is also furnished mounted on a light seamless steel tubular carriage, having large diameter wheels and tool tray; suitable for rolling around public garages or other public places. This outfit lists at \$80.00.

### BRAINS OF STEEL AND ELECTRICITY MAKE AN INFAL-LIBLE MEMORY

A busy man's memory is often overburdened by a thousand and one details which it must carry as best it can. Even the keenest minded sometimes forget important things they have to do at some future time, and recall them when the time is past. Memoranda help some, but often the memorandum itself is lost, or forgotten until it is too late. In details where punctuality is a factor, lapses of memory are very embarrassing and often costly. The need of a positive adjunct to the human memory has long been felt in the business world.

This need has at last been supplied by an invention just placed on the market. The Remindograph, as its name indicates, aids the human memory by reminding a man of what details he has to attend to at various hours during the day or night. As shown in the accompanying illustration, the machine contains a slot for each quarter hour of the day. In these slots are placed cards bearing memoranda of matters to be given attention at the hour and minute indicated. When the time arrives a small red electric light will flash up and the whir of an electric buzzer will remind one that there is something to be attended to. These continue till the card is removed from the slot, and gazing at it the busy man is reminded of some important detail which he must at once attend to.

The machine is mechanical and electrical in its operation, and is constructed of the best materials. Its cabinet is either in golden oak, ebony or mahogany. It is attractive, as well as business-like in appearance and an ornament to the office, as well as a reliable timepiece.

As a valuable asset to the business world it promises to rank favorably with the telegraph, multigraph, dictagraph, typewriter, telephone. It will be of special value to the automobile business. Every garage man usually has more to remember than it is possible for one mind to carry. The Remindograph will tell the garage man



when and where to call for or deliver cars. It will relieve his mind of all such details, so that he will have a clear head for the more important affairs of his business.

The invention is being marketed by the Automatic Remindograph Company, with offices at 431 South Dearborn street, Chicago.

# Mechanical and Engineering Problems

*THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by IRWIN D. GROAK, M. E., graduate of Hungarian Technical University of Budapest; patent attorney and consulting engineer for some of the largest engine and motor concerns in the United States. When shop information is desired, write Mr. Groak, care this office.*

## CHARGING BATTERIES

**Question.**—I have 110-volt, 60-cycle alternating electricity. I want to arrange a small battery charging apparatus, but it must be safe against injuring the battery. How could I arrange a home-made plant?

J. W. S., Kansas City, Mo.

**Answer.**—Home made outfits are not satisfactory. Either a rectifier or small motor generator, especially the latter, will give you good service.

## MORE SPEED

**Question.**—We have a Model M 1916, six cylinder, 7-passenger Reo Touring Car and would like to know how to get more speed out of it. We can by careful adjustment of carburetor get about 48 miles per hour. The carburetor does its work as it should; when I open the throttle wide it picks up all right, but when the engine reaches its limited speed it will back fire.

It does this at any adjustment. The car works all right on a pull but when it reaches 48 miles per hour it back fires and we cannot get rid of it.

Kindly advise if a different carburetor will give us more speed and if it will, name what kind and model.

This car has a No. D44 Johnson carburetor on it now. We would like to get about 55 miles per hour out of car if we can. This car has never been worked on or changed since it came from factory and has been out only two months and run about 1,500 miles.

H. H. C., Dale, Ind.

**Answer.**—For more speed you could install a larger size carburetor, Rayfield Stromberg or any standard make, and ask the carburetor people for instruction; 55 miles an hour is very strenuous for any stock car.

## MOTOR CHOKING

**Question.**—Will you please give us advice on the following?

We have a Buick 35, 1911 touring car, the motor of which is very sensitive. When going along on a smooth road at a moderate rate of speed, say 15 miles, it suddenly starts to load up. Also when stopping on the street to talk to any one and letting the motor run idle it

keeps going O. K. but the minute you step on the accelerator it will quite often choke up and stop and then we have a hard time starting unless we hold the auxiliary air valve open.

This trouble is not only experienced with this one car, but it is general with all Buicks of this type, even with different makes of carburetors.

The car also gradually slows down when coming to a hard pull (unless going real fast) and we then find we are unable to make it take the throttle even on intermediate.

Our opinion is that the exhaust valves are either not timed right for the motor or they do not have lift enough. Would you suggest a different cam shaft or can you suggest another remedy for our trouble?

Next we would like your opinion as to how to stop oil from working into the combustion chamber on a Modern 10 Buick.

B. B. B., Holland, Mich.

**Answer.**—Look over your gasoline line and clean it up; also clean your cylinders and see if piston rings need changing.

## THE AUTOMOBILE FUEL PROBLEM

**Question.**—We hear so much about different substitutes for gasoline. Can you give me some light on the subject? I read in a periodical that an engineer suggested to use crude oil under steam boiler and instead of gasoline to turn the attention to the steam. Also they talk so much about alcohol, but is not alcohol expensive?

A. N. Y.

**Answer.**—The fuel question lately has become important on account of the diminishing supply of crude oil and the growing market for gasoline, and we have decided to write monthly about the fuel question, therefore am glad to answer your question in a preliminary way.

The internal combustion engine has proved more satisfactory for automobiles and motor trucks than steam engines, and it is possible that soon someone will develop a fuel part of which would be alcohol, oil distillate and some other ingredients not known at present to make a reasonably priced fuel which shall accelerate easily, and on which the engine can start quickly. The writer himself has made several experiments and found that such a fuel is feasible, and it is only a question of time and money properly expended to produce one which will be also market-

able, that is, with a price lower than the price of gasoline today.

Kerosene was found objectionable on account of the high heat units it contains and the low volatility. A hot motor can run on kerosene; to start on another fuel, possibly gasoline, is not very satisfactory.

Watch these columns monthly as we expect to deal with this question thoroughly and tell you of new developments.

Distillate which is heavier than the kerosene and crude oil used in the Diesel type of engines may be used in motor trucks, tractors and other heavier vehicles, especially the ones used by the Army for both transport and hauling. But for light auto service it is not to be used as fuel, the reason for this being that the low volatility crude oil in order to burn properly requires heavy compression—from 300 to 1,000 pounds. Naturally, on account of this, the construction of the motor would become four or five times as heavy as it is today.

The vibration resulting can be probably eliminated, but the smallest possible weight that we figure out is more than the present weight of some of the automobiles of today fully equipped.

Another argument for a fuel which would contain alcohol is that it can be produced from corn or grain, and in this way there is no limit to the amount of alcohol to be produced yearly, while with crude oil from which gasoline is extracted we are limited to the amount that is pumped out from the earth, and in some large fields the supply is diminishing. The time will come when the manufacturers of automobiles, especially the engineers, will pay more attention to the design of the car so that the mileage can be obtained more economically. We believe that there are millions of gallons of gasoline wasted yearly which could be saved by economy. If there would cease to be such a tremendous demand for gasoline, naturally the price would be much lower.

## WELDING AUTO SPRINGS AND STEEL GALVANIZED TANKS.

**Question.**—I have a number of automobile springs to weld and would appreciate your informing me as to just how to undertake the job in order to get the best results. Is the use of a special steel filler advisable, and must they be retempered after welding? In

the work on automobile springs I have already done I used a soft Norway iron filler and have done no retempering. Some of these welds have held, while others have failed.

In welding a galvanized steel tank for hot water the other day I met with failure, as I could not fill up the blow-holes. The acid seemed to keep them open. Would you advise my not trying this any more, or is there some special way of welding such a tank satisfactorily?—L. B., Mich.

**Answer.**—The welding of automobile springs by the oxy-acetylene flame is as a rule unsatisfactory, due to the high carbon content of the metal. Theoretically, you should use a welding rod of a higher carbon content than the spring (and retemper after welding), but in doing this considerable carbon is burned out and oxides are left as well in the joint, so that a weld can never be anywhere near as strong on an automobile spring as the original metal. When the leaf is the one which bolts to the shackle and the break adjoins the part which is rolled up and which the bolt goes through the weld may be made with mild steel or Norway iron and heavily reinforced and not tempered. This as a rule will hold, but it is best to consider any welding of an automobile spring as of a temporary character.

Galvanized iron, such as your hot water tank, cannot be welded due to the much lower melting point of the zinc which covers and penetrates into the pores of the iron. The vaporizing of the zinc prohibits the iron being melted without absorbing these gases. A repair can usually be made by using soft brass wire, with borax as a flux, and a decidedly carbonizing flame.—Acetylene Journal.

### FELT COMPANY IN LARGER QUARTERS

The Advance Felt Specialty & Cutting Company, Chicago, have moved into their new quarters at 318-322 South Jefferson street. This is the second move for the company within the last eighteen months, due entirely to the rapid growth of the business. The new building is of the "daylight" type, two stories with full concrete basement, brick construction with sprinkler system, equipped thoroughly with specially designed machinery for the cutting, stripping and punching of felt cloth, rubber, and analogous materials.

The Advance people specialize in the manufacture of felt parts for automobiles, motors, transmissions, axles, etc., and announce that the new quarters will enable them to back up their trade mark, "Advance Quality plus Service" with even greater force than ever before.

# The Organization Director's Corner

## GREETING SIGNS IN PLACE OF WARNING SIGNS

**Welcome Motorists**

When this sign greets the motoring party on entering a town en route instead of the usual "Speed limit ten miles an hour—violations will be prosecuted," (the last word in many instances should read persecuted), it is safe to say that any want that has arisen in the party such as food, refreshments or supplies will be gratified here. If satisfactory service has been received, and upon resuming the journey another sign at the other side of memories will remain the town is seen bearing the inscription, pleasant with the members of the party for a long time to come. This brings us to the object of this article. Garagemen as one of the principal beneficiaries of this class of trade should play a prominent part in inducing the other business men of their town to join in forming a little organization among themselves to foster such a spirit as the above quoted signs would indicate, and thus make their particular town stand out for the touring motoring public like a "beacon light to a shipwrecked sailor."

**Thank You Call Again**

## A EUROPEAN INVASION

The daily papers announce that the automobile manufacturers of Europe may enter the field of low priced cars at the close of the war and manufacture to compete with American cars.

According to information claimed to have been received in America from authoritative sources, manufacturing on the other side will be done in factories which have been enormously increased in size since the war started to enable the manufacture of munitions in sufficient quantities to meet the needs of the great conflict. Many of the factories have been so greatly enlarged that they are employing, in many cases, five times as many men as before. It is claimed that the European makers with low-priced labor will over-manufacture, and that an invasion of European cars will cut a big figure in the American market.

While this advance information may closely approximate the intentions of these manufacturers, it still need cause no alarm, especially to the garage and repair trade, for the more cars in use the more business there will be for the garage man and the cheaper the cars in use the more business there will be for the repair man—and this is where our interests lie.

## SAD STORY—ILLUSTRATED

A motorist moted down the street  
In a double-six gas wagon

Very fleet,  
Like this:

ssss ----- sizz!

And after he rolled at a terrible pace,  
A gaso-bike copper who

Ate up space

Like this:

!-----!-----!----- chug-chug!

And as they raced onward a dizzy mile  
The auto's speedometer

Read the while

Like this:

18 - 17 - 18 - 17 - 18.5 - 18.3 - 5 - 0

But the copper's device had a higher gear—

It read, as the chug-bike

Brought up the rear,

Like this:

100 -- 110 -- 115 -- 123 -- 165 -- 200

The auto, though slower a hundred an hour,

Was leading, and had all the bulge

In power

When lo!

vvv -- xxx -- zzz -- (Street Closed!)

The copper caught up and he softly sighed,

"Dash, dash, double blank

On your blessed hide"

Like this:

"xx -- &¼/₄ . . . "" "" \$ \$ = × +"

There followed a courtroom, all dim and dark

And a judge who of mercy had not

A spark.

He said:

\$ \$ \$ \$ \$ \$ . 50 and costs.

—Chicago Journal.

The American manufacturer of low-priced cars may have some slight cause for worry if this invasion really materializes, which is, to say the least, doubtful, but these European makers will do well if they succeed in marketing as many of their cheap cars in this country as they have absorbed of second-hand American cars during the last two years.

According to a St. Paul detective who claims to have absolute information on the subject, more than 30,000 automobiles which have been stolen in the United States during the last year have been unwittingly purchased by representatives of the allies and shipped to Europe. Add to this list the great

number of legitimate second-hand deals that have been made and it is easy to comprehend that American garage and repair men have through this channel lost an enormous volume of business, and it would seem poetic justice for them to, later on, have the opportunity of recouping some of this loss by the business that would naturally drift their way if the threatened flood of European cheap cars did, in due time, make its appearance.

### THE FIELD WORK

In the last issue I announced the wonderful record set the month previous by our field men in signing up fourteen hundred and fifty new members, and ventured the prediction it would not stand as a record for long—really expected to beat it this month. While we came close to it, we did not beat it, and the reason can be attributed to the many new activities which were started with the last issue of our journal. These are now all well under way, so "watch our smoke" next month.

### BRISCOE WINS MT. DIABLO CUP

The Mount Diablo cup, the perpetual challenge trophy for road record between Oakland, Cal., and Mount Diablo, was won by a Briscoe car during the month. The time was 1 hour, 1 minute and 50 seconds, or nearly five minutes better than the best previous record. The record was made from Key Route Inn to the peak of the summit.

The car carried three other passengers besides the driver. The start was made Tuesday morning at 5:15 and Hammond reached the summit 61 minutes 50 seconds later, covering over thirty miles of road, climbing to an altitude of 4,000 feet.

After the drive up Mount Diablo had been improved the Key Route Inn offered a trophy for the car loaded with four people making the fastest official time between the inn and the summit.

The Franklin was the first to drive away with the trophy, but the Oakland six beat the Franklin record. It next went to the Chevrolet, which beat the Oakland record by making the climb in 66½ minutes.

### SOME STAMP TAXES DISCONTINUED

It may be of general interest to the members of our association to know that the act repealing the Federal Revenue Act, going into force Sept. 8, makes it no longer necessary that revenue stamps be placed upon notes, deeds, bonds, stock certificates, or other documents mentioned in the former act. Anyone having unused revenue stamps can have the same redeemed.

# Our Washington Letter

A. A. G. O. OFFICE  
1108 Woodworth Bldg.

E. H. PULLMAN  
Representative

Washington, D. C., Oct. 1.—Although there has been a slight reduction in the price of gasoline during the past few weeks, the automobile and consuming public practically the country over is demanding cheaper motor fuel. Various governmental agencies have the question under investigation, but no definite action in an effort to bring down the price has been taken. The Department of Justice has its eye on the situation and has had ever since the dissolution of the Standard Oil Company, but is not divulging the results of its observations or its conclusions in the matter. The Federal Trade Commission has also gathered information on the general situation and now the Department of Commerce will take up the matter.

Should the high price of gasoline continue there is hardly a doubt but that Congress will take some action in the matter at the next session, beginning in December, and A. A. G. O. influences focused on Washington would have a very potent effect. In the late session there was a demand among several members who introduced resolutions on the subject. The Senate adopted a resolution last session requesting the attorney-general to report on investigations of the oil situation of the country, including the Standard Oil Company, relating to oil or gasoline, since the decree of dissolution in the Standard Oil case.

The attorney-general reported that the conditions in the industry were under observation and consideration and it was not advisable to give the information. The Senate also adopted a resolution asking the Department of Justice if the phenomenal increase in the price of gasoline was the result of a violation of law. The resolution recited that gasoline was as much a necessity as coal, that the price had reached an unreasonable figure and that it was believed the high price was due to monopoly.

Bills are also pending in the House to check the advancing price. One is by Representative Howard of Georgia and proposes to lay an embargo on crude petroleum which would stop exportations of oils and permit of a greater supply to this country, thus driving down the price. Another is by Representative Steenerson of Minnesota, giving power to the Federal Trade Commission to regulate the

wholesale prices of gasoline, petroleum, etc. These measures have received special mention in the columns of the American Garage and Auto Dealer and are embodied in the text of the A. A. G. O. petition to Congress.

Congressional action to set a standard for commercial gasoline may be the outcome of efforts being made by the Retail Merchants Association of the District of Columbia. R. P. Andrews, president, and Charles J. Columbus, secretary, of the association, have conferred with Secretary William C. Redfield of the Department of Commerce as to what could be done toward insuring a purer product to the public than is now sold by many dealers. Mr. Redfield said the department was willing to cooperate toward this end and will confer with Director Stratton of the Bureau of Standards on the subject. The Merchants Association officials were asked by Secretary Redfield to see him again after he had discussed the situation with Director Stratton. A committee of the association has been appointed for the investigation, comprising Joseph M. Stoddard, Claude E. Miller, M. A. Bayles, R. N. Harper, Charles W. Semmes, S. H. Horner, J. A. Hamilton, E. C. Graham and Mr. Columbus.

It is said the exact chemical constituency of the various oils never has been scientifically defined. Some of the experts of the Bureau of Standards believe it would be impossible to do so.

It is understood, however, that a series of tests has been in progress in the hope of working out a maximum and minimum of specific gravity between which gasoline might be considered pure. Congress could then legalize the standard.

### CONGRESS IS AFTER THE GASOLINE PRICE BOOSTERS

The following concurrent resolution was passed by both houses of Congress and the investigation provided for is now under way:

"Whereas, In the stride of human progress and invention gasoline has become as much a necessity to the thrift and welfare of the American people as a source of power and propulsion as is coal; and

"Whereas, The commercial cost of the same has been advanced from time to time until it has reached a most un-



reasonable figure, thereby imposing an unjust burden on the people and

"Whereas, It is charged, and by many believed, that the high price of gasoline is due to the monopoly control of the Standard Oil combination and other interests: Therefore be it

"Resolved by the Senate (the House of Representatives concurring), That the attorney-general of the United States be, and is hereby, directed to cause an investigation of the subject as to whether this phenomenal increase in price of this article is the result of any violation of the laws of the United States."

You have all heard of the Kenyon resolution. Well, here it is:

"Resolved, That the attorney-general of the United States is hereby requested, if not incompatible with the public interest, to send to the Senate any reports in his department of any investigations of the oil interests of the United States, including the Standard Oil Company and other companies affiliated therewith or independent thereof, the same to cover all reports of investigations made by Department of Justice relating to said subject or to gasoline or oil since the decree of dissolution of the Standard Oil Company."

Sumpin' is doin'—only the machinery of action does not move fast enough. How about a little A. A. G. O. lubricant?

### SHORT WEIGHT GASOLINE

Washington, October 2.—An examination by the Federal Bureau of Standards of gasoline pumps in Illinois shows that many used in serving automobiles give short measure. The investigation was made on request of the state sealer of weights and measures. The same condition was found in Allegheny county, Pa. The condition of the pumps, according to the bureau, was found to be very bad, and in the aggregate a very decided tendency toward short delivery was found.

A Washington man, said to know what he is talking about, is quoted as saying that he had hit upon a combination product that will do the work of gasoline and that he was producing it at a cost of 9c a gallon.

The Bureau of Mines has had the gasoline situation under observation for months and expects to issue a report within a month. Gasoline specifications drawn by the Bureau will be available to the public, says Van H. Hanning, director of the Bureau. They will constitute a guide for the public. It is impossible for the motor car owner to test his gasoline to see whether or not it is up to the specifications, but it will be found that when the federal specifications become known the gaso-

line dealers will be purchasing supplies according to specifications and assure the consumer that he is getting gasoline that fills the requirements.

Ordinances governing the sale of gasoline in other cities are being collected by the Retail Merchants' Association of this city in its investigations into the gasoline situation.

### STATISTICS ON THE AUTO INDUSTRY

Washington, D. C., Sept. 28.—Statistics on the automobile industry of the United States have just been issued by the Census Bureau covering the year 1914 in comparison with 1909. They show an increase in every branch of the industry, ranging from 67.8 to 170 per cent. In all there were 1,738 establishments engaged in the automobile manufacturing business, 300 in the production of automobiles, 971 in automobile bodies and parts, 33 establishments in other lines of manufacturing, producing automobiles, and 434 like establishments producing automobile bodies and parts. In 1909 there were 743 automobile manufacturing establishments. The number of concerns engaged in the manufacture of automobiles increased from 405 to 760.

The industry in 1909 made employment for 75,721 persons and in 1909 there were 127,092 wage earners. Value of products in 1914 was \$632,830,000, as against \$249,202,000 in 1909.

The complete figures of the census are as follows:

	1914	1909	Per Cent of Increase, 1909-1914
	Automobiles	Automobile Bodies and Parts	Total
*Number of establishments.....	300	971	1,271
Persons engaged in manufacture....	91,997	58,954	145,951
Proprietors and firm members....	60	700	760
Salaried employees.....	12,630	5,469	18,099
Wage earners (average number).....	79,807	47,785	127,092
Primary horsepower.....	104,988	68,701	17,684
Capital.....	\$812,876,000	\$94,854,000	\$407,730,000
Services.....	\$4,901,000	\$4,552,000	\$189,453,000
Salaries.....	17,966,000	19,580,000	87,526,000
Wages.....	66,935,000	34,992,000	101,927,000
Materials.....	292,598,000	63,610,000	356,208,000
Value of products.....	503,220,000	129,601,000	632,831,000
Value added by manufacture (value of products, less cost of materials).....	210,623,000	65,991,000	276,623,000
			117,556,000
			185.8

\*In addition, in 1914 thirty-three establishments, primarily engaged in other lines of manufacture, produced automobiles to the value of \$6,636,920, and 434 establishments of this character manufactured automobile bodies and parts to the value of \$10,515,070; in 1909 similar establishments produced automobiles valued at \$880,080 and automobile bodies and parts valued at \$4,415,866.

### MOTOR CAR INFRINGEMENT CASE SETTLED

The Smith Form-A-Truck Company, of Chicago, and the Redden Motor Truck Co., of New York, have gotten together and settled their dispute over the validity of the Cook patent, which is the basic patent controlling the manufacture of all devices for converting pleasure cars into trucks by means of a truck frame, axle, springs, wheels and tires, composing a unit so designed as to slide over and bolt to the pleasure car frame, thus relieving the pleasure car axle of all loads.

To the extent that this patent is in-

### Works Fine; Helping Gasoline Fight

Juhnke & Bell, automobile supply, tire and accessory dealers at Fairbury, Neb., write: "Mr. Richard H. .... and Mr. William J. .... have settled their accounts in full, which shows that the A. A. G. O. collection service works fine. We will help in the campaign to reduce gasoline prices. Every car owner should sign the A. A. G. O. petition."

### TWO NEW DISTRIBUTORS APPOINTED

C. F. Stewart, vice-president and general sales manager of the Bour-Davis Motor Car company, has announced the appointment of the I. H. Stratton company of Los Angeles as distributors of the Bour-Davis cars for Southern California.

Ralph Dort, advertising manager of the Dort Motor Car company, of Flint, confirms the report that C. T. Silver has been appointed distributor for the Dort car in New York territory and will handle this car in connection with the Chalmers.

Patronize advertisers in this journal and thereby help finance our Association and its activities.

involved, the two companies will work in harmony. The Smith Form-A-Truck Company is one of the largest manufacturers of truck units in America, while the Redden Motor Truck Company is a strong factor in this field of production.

It is a pleasure to note that these important interests have decided to harmonize rather than to fritter away their resources in long, drawn-out litigation.

The price of the Dort touring car, manufactured by the Dort Motor Car Company, Flint, Mich., has been raised to \$695; old price, \$665.

# Pirate Parts Traffic Danger to Auto Trade

**A Practice Especially Dangerous to Garagemen and Dealers—Undermines Confidence and Drives Away Trade—Faker Manufacturers Should Be Given Wide Berth—Sell Goods for What They Are, Not for What They Pretend to Be**

Much has been said by advocates of fair trade of the evils of substitution. Both the public and the dealers who serve them, have been rapidly learning the folly of tolerating substitution in any form.

Strenuous effort has, in the last few years, been directed towards discouraging and preventing substitution.



The public has been taught to meet substitution with: "No, thank you, I want what I asked for."

Trade bodies, and commercial associations especially, have been very active.

The public has been taught to meet substitution with: "No, thank you, I want what I asked for."

In spite of the rapid advancement which has been made in the discouragement of substitution, this great evil has taken on a new form in the automobile industry.

It is the manufacture and distribution of imitation parts for repair and replacement on standard accessories with which automobiles are equipped.

There are quite a number of con-



The accessory dealer, or garage man, who fills orders with substitute parts is helping to foster the business of pirate manufacturers.

cerns engaged in the manufacture and sale of these substitute parts for replacing certain wearing parts on standard accessories, such as magnetos, start-

ing and lighting systems, speedometers, etc.

## **Sale of Pirate Parts Affects Automobiles As Well As Accessories**

The practices of these pirate parts makers affect not only accessories, but automobiles as well. Sales of certain well-known makes of cars have mounted well up in the hundreds of thousands. Here the pirates find a rich field for their operations. That they are taking advantage of it is a well-known fact. On every hand dealers and distributors are found offering imitation repair parts for this or that well-known make of car.

The sale of substitute repair parts for automobiles directly affects automobile dealers. Seldom, if ever, does a dealer who sells a certain make of car offer substitute parts for replacement. But other dealers and distributors do, and are stealing this business from the dealers to whom it rightfully belongs. And they are directly imposing a hardship upon the car manufacturer, for oftentimes the installation of an imitation part impairs the running qualities of the car and the owner is likely to put the blame on the car instead of on the substitute part.

## **Laws Are Needed to Prevent These Pirate Practices**

This business, more correctly termed "Pirate Parts" business, is rapidly assuming such large proportions as to soon become a real menace to the automobile trade.

Steps should be taken to bring about the enactment of laws to curb this evil practice. Laws are needed to protect not only the motoring public, but the manufacturer as well from the depredations of these pirates. It is, indeed, unfortunate that after a reputable manufacturer has invested millions in factories, equipment, advertising and good will in the successful production of high-grade automobiles or accessories, some pirate comes along who has only a backroom shop with little or no investment, does not advertise, neither does he brand his product, but whose only aim is to pirate the parts business to make an exorbitant and unreasonable profit for himself.

The maker of substitute parts proves himself a pirate by taking advantage of the reputable manufacturer's rank and success in business. He never wastes time on the small manufacturer. But as soon as a manufacturer of accessories or automobiles has made a big success, then the "piker" substitute maker starts out to pirate the parts business.

Following is an extract from a letter written to Motor World, which gives a dealer's opinion of this pirate business:

"Now, the question of whether this business is within the law is of little interest to the writer. His objection to the practice is simply one of clean business, and the fact that the imitation parts made 'to fit' at least one ignition device with which he is familiar, do not perform their function properly and



But the sale of a substitute part for the genuine proves to be a "boomerang" when the customer discovers that he has been cheated.

give trouble which the car owner (who does not know that he has bought fake parts) blames first on the car, then the ignition system.

"The use of cheaper imitation parts by a garage and repair man is just as 'bad business' as stopping a radiator leak with cornmeal and charging for a soldered repair.

"The manufacturers of these parts are out to pirate the parts business. Price is their only sales argument. They assume no responsibility—the layman cannot tell whether the part is properly constructed or not—can only go by the resemblance between the real and the imitation. The only aim of the imita-



The maker of substitute parts belongs in the same class with the pirates of old, who traveled the high seas preying on legitimate merchant ships.

tion part manufacturer is to make something that looks like the genuine and sells for less. His methods of manufacture do not permit of accuracy. If

they did, his price would, of necessity, be higher than that of the original manufacturer."

It is very apparent that the sale of these pirate parts by accessory dealers and garage-men is unfair to the car owner.

#### Dealers Who Sell Pirate Parts Violate Customers' Confidence

The average car owner knows little or nothing about the parts which constitute the various accessories on his car; but he does know that there are certain wearing parts which he may, at some time or other, find it necessary to replace.

We will take, for example, the Stewart Speedometer. Through some cause, perhaps lack of lubrication, the swivel joint which is connected to the flexible shaft becomes worn. Naturally, the car owner will go to the dealer he is in the habit of trading with and ask him to furnish a new swivel joint for his Stewart Speedometer.

Suppose the dealer sells him a swivel joint which, to all outward appearance, is exactly like the original and yet is not made by the original manufacturer. This part may give service, and may not; the chances are, it will last only a very short time.

When this imitation part does give way, the car owner will very likely do as many other car owners have done—drive to the nearest branch or service station operated by the original manufacturer. There he is informed that the part sold to him by his dealer is not genuine, but is made by some pirate.

Of course, the car owner has no recourse. It never occurred to him to question the integrity of his dealer. Nevertheless, he will not forget that his confidence has been violated—that he received a substitute when he thought he was buying the genuine article.

Not only does the dealer lose this man's business, but the business of many other car owners, for oftentimes when a man has been taken advantage of in this manner he does not hesitate to tell his friends about it.

#### Additional Profit Is Small Gain in the End

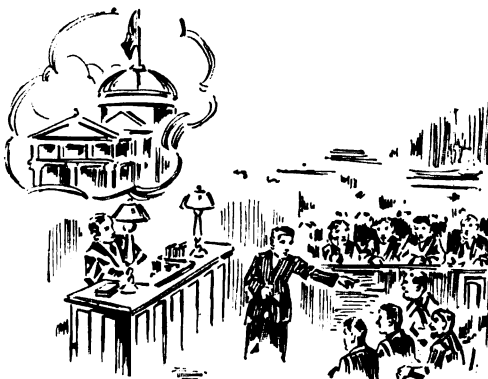
Perhaps on this particular sale the dealer made an extra profit of 25c or 50c. What does that extra profit amount to when compared with the many dollars' worth of future business he loses as a result of this substitute sale?

Even if an imitation part did happen to give satisfactory service, still the customer is bound to be dissatisfied when he discovers he has not secured the genuine article.

A car owner tells of his experience with substitution in the following letter which appeared in the June 29th issue of *Motor Age*:

"Some time ago my Stewart Speedometer shaft broke and I ordered another of a supply house. One was sent to me lacking the Stewart trade-mark, and the excuse offered that they were out of the Stewart link-chain type, and as the one forwarded was giving good service they had taken the liberty of sending the substitute. The shaft on the substitute was like the standard Stewart in every way, but was of the coil-spring type.

"It broke after it had been used about twenty-five miles. I returned it. The second one hardly ran a mile when it broke a swivel. Not knowing just where the trouble was, I put on a new swivel and then the gear broke. I then went to the shaft and found it would catch in certain positions. I returned it to the jobber and asked for a genuine Stewart shaft or my money returned. I received a Stewart shaft



Before long laws will be passed to stop these pirate practices, and offenders will be brought into court and punished for carrying on, or contributing to, this pirate business.

and now everything works smoothly. No substitute for me after this."

It is very easy to imagine the opinion this man has of the dealer who sent him a substitute part when he ordered a genuine Stewart shaft. True, he received a genuine Stewart shaft when he insisted on it. But still, it isn't probable that he has the same regard for a dealer whom he now knows sells substitute parts. It is doubtful if he will patronize this dealer again.

Doubtless, there are hundreds of car owners who have been taken advantage of in a similar manner. Usually, they say nothing—charge it up to experience—and do their purchasing of some other dealer.

#### Dealers' Business Success Depends on Confidence

Ninety per cent of a successful dealer's business is built up on confidence. His customers have confidence in him, and that is why they continue to patronize him. Once this confidence is violated a good customer is lost and very seldom comes back.

When a car owner shows his confidence in a dealer by trading with him,

he expects to be treated fairly and to receive what he pays for.

Sooner or later every dealer will realize that if he would conduct his business at a profit and see it grow, he must shun the manufacturer or distributor who tries to convince him that he can make a nice easy profit by selling these "just-as-good" parts in place of the genuine.

#### Even Leading Concerns Sell Pirate Parts Through Ignorance

It is surprising to find that some of the leading concerns who deal in accessories on a large scale, firms that rank high in the industry, will stoop to sell substitute parts for standard accessories and automobiles. They are unknowingly being made a party to a practice which will sooner or later prove to be a boomerang. The ultimate consequences of this pirate business will be found costly. It will alienate their customers' good will and bring them into disrepute.

We know of dozens of reputable concerns who carry these substitute parts in stock. We believe, however, that as soon as the matter is laid before them in its true light, they will discontinue altogether the sale of pirate parts.

Needless to say, this sort of business is unfair to the reputable manufacturer who has invested his time and capital in building up a business, and whose success depends largely upon the merit and quality of his product.

It is the manufacturers of standard accessories who, in a large measure, make it possible for the accessory dealers to build up a profitable business. Without question, they are entitled to consideration.

A pirate part carries with it no guarantee of service—no assurance that it will properly perform its functions.

When the part is delivered and the money is in the dealers' till, then the transaction is completed. When the part fails in service, the customer has no redress. There is no guarantee that the part must live up to.

#### Costs More to Make Genuine Parts

Of course, it costs the reputable manufacturer more money to produce parts for replacement. He has a reputation to protect and a published guarantee which he must make good.

In addition, he must operate branches and service stations in all large cities to take care of replacements. He can use only the best materials and employ the greatest care in manufacture, all of which is more costly. But in the long run, genuine parts are cheapest, for they are sure to give satisfactory service for a much longer time than imitation parts. —Reprint from *The Stewart Lever*.

# The Law *and* The Garage Trade

*THIS department is edited by CHARLES C. BOMBAUGH, LL. B., general attorney of the American Association of Garage Owners, and a prominent practitioner in the federal and state courts; also lecturer and writer on commercial law. When information on any legal problem connected with the operation of your business is wanted, write this department.*

## CARS DRIVEN AT OWNER'S RISK

From Sharon, Pa., comes an inquiry regarding the collection of a bill for repairs under the following circumstances: Garage owner has a notice posted reading as follows, "All cars driven by our employees at owner's risk."

A car was brought into the garage for adjustment and after the work was done, the owner of the car and one of the employees of the garage owner took the car out to try it. While out on the street another automobile driven very rapidly ran in front of the one repaired by the garage owner, and without any negligence whatever on the part of the employee driving the car, a collision occurred.

The garage keeper, at the direction of the owner of the car, repaired the damage, amounting to about \$20. The owner of the car refuses to pay, saying that the accident was not his fault.

**Question.**—Can the bill for repairs occasioned by the accident be collected from the owner of the car?

**Answer.**—There seems little doubt but that the garage keeper has a perfect right to his money for the repairs made and would have a lien upon the car if he had not parted with possession. Having parted with possession, the only remedy is by suit and collection in the usual way that debts are collected.

## A SOLDIER'S DEBT

An inquiry has been received regarding the collection of a note given by a man who is now at Camp Stuart, Tex., a member of the National Guards of the United States. We know of no way in which this claim can be collected.

It might be possible to start attachment suit and levy upon any property of the debtor not exempt. The chances are greatly against such procedure, and we cannot conscientiously advise such action.

## REPAIRING A MORTGAGED CAR

From Ann Arbor, Mich., we have an inquiry regarding a bill against a car upon which there is a mortgage, requesting information as to how to proceed to enforce collection.

The garage owner has right to foreclose his lien in the manner provided

by the Michigan Lien Law, and sell the car subject to the mortgage. In other words, the garage keeper can sell the equity of the owner of the car.

From the same source comes an inquiry regarding the enforcement of a lien on a car purchased on the monthly payment plan under a contract. The reply to the last inquiry mentioned above would apply in this situation. Whoever purchased at the sale to foreclose garage keeper's lien would have a right to pay off the balance remaining due under the contract and would have good title to the car.

## CREDITORS SHOULD POOL THEIR INTERESTS

From Kearney, Neb., the following situation is presented: Garage keeper renders certain services to the reputed owner of a car and the car is put in another garage before the bill of the first garage man is paid. The second garage keeper has a claim against the car, and there is also a chattel mortgage lien and some other liens not definitely mentioned.

**Question.**—What is best to do under circumstances?

**Answer.**—It is rather difficult to say, but it would seem to us that all four lien holders should pool their interests and dispose of this car and pay off the liens, if possible, or at least pro rate the amount received between the various lien holders.

It is possible the owner of the mortgage would refuse to do this, but the car could be sold subject to the mortgage, and whatever interest the debtor has could be disposed of. This might not get the money, but would at least prevent the owner of this car in question from imposing upon other garage keepers.

It also might be advisable to furnish information through the regular sources of credit advice and the A. A. G. O. regarding the manner in which the owner of the car in question obtains credit.

## WHO IS LIABLE?

From Sleepy Eye, Minn., comes an inquiry as follows:

The garage keeper rented two cars to a base ball club. A Mr. Hoffman, who was one of the base ball players, drove one of the cars. Mr. Hoffman ran into a ditch with the car he was driving and employed a farmer to pull the car out. The result of running into the ditch was a broken wind shield and a sprung steering apparatus, which caused the ruination of the front tires before is was discovered.

**Question.**—Is the owner of the car liable to the farmer for pulling the car out of the ditch?

**Answer.**—We can see no liability between the owner of the car and the farmer. Mr. Hoffman was not an employee of the garage, but was one of the base ball players, and it was with him that the farmer made the contract to pull the car up onto the road. Instead of the owner of the car being liable for anything, we believe that Mr. Hoffman and the baseball club are liable to the owner of the car for damages sustained by running into the ditch.

## DISPOSE OF THE SUIT

An inquiry from Indiana as to how to proceed under the following facts has also been received:

Suit was brought and judgment obtained for the amount of the bill in a justice court. The debtor appealed to the circuit court, but nothing has ever been done further with the appeal.

**Question.**—What is the garageman's next move?

**Answer.**—The creditor should take steps to have the appeal perfected and the suit disposed of in the Circuit Court. Until this is done nothing further in the way of collection is possible.

## CRIMINAL PROSECUTION MAY NOT GET MONEY

We have received an inquiry from an Indiana member regarding a bill of goods for which a check was given on a bank where the maker of the check had no funds, which check went to protest and was returned dishonored. The maker of this check is undoubtedly guilty of a criminal offense for which he could be arrested and convicted, but that would not necessarily mean that the garage owner would obtain the money rightfully and lawfully due him, and after all is said and done, that is what people are in business for.

The debtor in this particular case is also serving a term on the penal farm in Indiana and is supposed to be a man of some financial responsibility. In cases of this kind we believe the better way would be to attach the property of the debtor and try to enforce collection of the claim in that manner.

According to the Oklahoma Supreme Court, when the seller of a car claims that it is efficient in any specified manner, his statement is not the mere expression of opinion, when the buyer innocently relies upon the representation. If the facts are different, said buyer has cause for action.



# Are You Out of Line?

Or are the 450,000 motorists in the Middlewest who use the perfect lubricant,

## Polarine

FRICION REDUCING MOTOR OIL

The oil which minimizes friction and repairs — flows as freely at zero as at 100 degrees — maintains the correct lubricating body at any motor speed or temperature — does away with excessive carbon and scored cylinders.

Polarine sales are increasing at the rate of one million gallons per year.

Its use is recommended by the Standard Oil Company for any style or make of car.

Use Polarine, and lubrication begins the minute your engine starts.

Order a half barrel today. It is cheaper that way than in smaller quantities.

Standard Oil Company (Indiana) Chicago, U. S. A.

***Use Red Crown Gasoline and get more power, more speed, more miles per gallon***



# Garage, Shop *and* Store Insurance

*THIS department is edited by MATTHEW WHITE, insurance commissioner of the A. A. G. O., who desires a free discussion of all subjects dealing with the insurance problems, fire and casualty, of our readers and members. Application blanks, etc., on request.*

## QUICK SETTLEMENTS

As a subscriber to the Inter-Insurance Exchange of the A. A. G. O., you may be assured of a degree of service in the prompt adjustment and settlement of your claims.

There will be every incentive on the part of the Exchange to avoid litigation in the adjustment of claims. Long drawn out suits are not in harmony with the operations of an Inter-Insurance Exchange inasmuch as in the case of the A. A. G. O. Inter-Insurance Exchange it is designed primarily as a beneficial service to its members. Its cost to the subscribers is fixed at 25 per cent—no more and it may be less eventually. On the other hand, the old-line companies invariably make haste slowly and profit frequently by the delay—and almost always delays are dangerous.

In the case of your own Insurance Exchange you know definitely that seventy-five cents out of every dollar paid in by the members is under the control of the Association and the Advisory Committee, deposited to the credit of the individual members of the Exchange, to be paid out to them either for losses or in the form of a refund. The premiums in this way are not scattered to the four corners of the earth, necessitating a legal fight oftentimes, to get losses paid with anything like promptness and satisfaction. "Money is power"; keep your insurance premium funds under your own control through your own A. A. G. O.

## REAL CO-OPERATION

Since our last issue, we have received almost one hundred applications for information in regard to our Inter-Insurance plans.

The inquiries were not confined to any one particular section of the country. This speaks most eloquently for the circulation department of our Journal.

It also shows that members are paying careful attention to the Inter-Insurance Exchange and its activities, and well they might. The garage business is the only large trade today that has not enjoyed the benefits of their own Inter-Insurance Exchange. This is not surprising inasmuch as the trade was without a virile national organization,

which had eyes and ears for the trade throughout the country and the will and faith in the trade to act for it.

We have received many requests for information from distant points, which breathe co-operation, and a knowledge of what inter-insurance means. This is all very pleasing, and augers well for the quick establishment of an exchange with quick and full results to the member of the A. A. G. O.

Our organizers are being sent out with full information on the subject of fire and casualty insurance. They have some **startling innovations** to place before you, especially on liability insurance. *Don't renew your old policies until you know our plans.*

## A SQUARE DEAL FOR EVERY INSURER

Commissioner W. F. Dunbar, of Tennessee, in his paper at the Insurance Commissioners' Convention, on "The Value of Schedule Rating in Securing Equitable Fire Rates," said: "Every man wants to know that he is being treated fairly; that the individual merits of his risk are recognized in his rate, and that he is paying no more than his neighbor or his competitors for the same thing. If he has taken pains and spent money to improve his risk or to build better than his neighbor, he is entitled to and should under any conceivable system of rating, receive recognition for these betterments."

## A FIRE INSURANCE INCONSISTENCY

One of the greatest inconsistencies of automobile fire underwriting is the fact that high-priced cars are insured for a much larger per cent of their value the second and third years than are cars of less value. A trip to the different garages in any city will soon convince anyone that the great depreciation is in the high-priced cars, and that the depreciation in the standard smaller-priced cars is the smallest.

It is a very usual occurrence for a Ford car, after being driven a year, to sell for a few dollars less than the original purchase price. In other words, the standard low-priced cars are put out at a price that represents real value, and it is pretty hard to pound very much of that value out of them.

## OVERHEAD COST FIXED

In inter-insurance, the management and overhead charges are fixed definitely by contract; there is no tribute to

brokers and agents. You **save** that portion of your premium which would otherwise go to stock company dividends and their excessive agency and overhead expense.

*If You Operated One Thousand Garages, You Would Hardly Think of Insuring in a Stock Company, as Your Exposure Would Be Sufficient to Establish Your Own Steady Loss Average, Maintain Your Own Insurance Fund, and Adjust Your Own Losses. THAT IS WHAT INTER-INSURANCE WILL ACCOMPLISH FOR YOU.*

There is no inducement on the part of the management of an Inter-Insurance Exchange like the A. A. G. O.'s to deny liability in order to make profits as in stock companies, as the object is to serve and satisfy you by the payment of all your just losses. The funds are yours not the management's; the expense of operating is fixed and cannot be increased at your expense.

## EXPLOSION OF AUTO TANK CAUSES \$10,000 GARAGE FIRE

A number of automobiles were damaged and a loss of \$10,000 was caused by a fire in the Logan Square Garage, 2548 Linden place, Chicago, Ill.

Leonard Petzel, 5074 Avondale avenue, a mechanic, was working in the rear, but was ignorant of the blaze until gasoline in the tank of an automobile enveloped by the flames exploded. Firemen had little difficulty in subduing the blaze.

Rumor had it that the fire was the result of labor trouble, but this could not be confirmed. The owner, A. Pratt.

## 100 AUTOS DESTROYED IN CHICAGO WHEN GARAGE BURNS

The careless use of a lighted lantern used while filling the gasoline tanks of automobiles in the Graceland Garage, Southport avenue and Irving Park boulevard, is believed to have caused an explosion, which set fire to the garage, during the month. The building was fully covered, but the garage operator was not. About 100 automobiles, only two of which were saved, were in the garage, according to Henry A. Dorner, the owner. The loss is placed at \$150,000.

Frank Madden, the employe, escaped from the burning building.

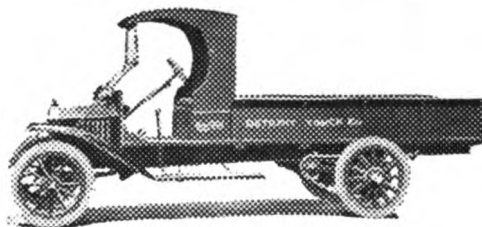
## CO-INSURANCE

Republished From Our August Issue

Our members and readers have heard a great deal during recent months about inter-insurance, old-line insurance, participating insurance, etc., but we ven-

# Take care of More Business with the Same Upkeep

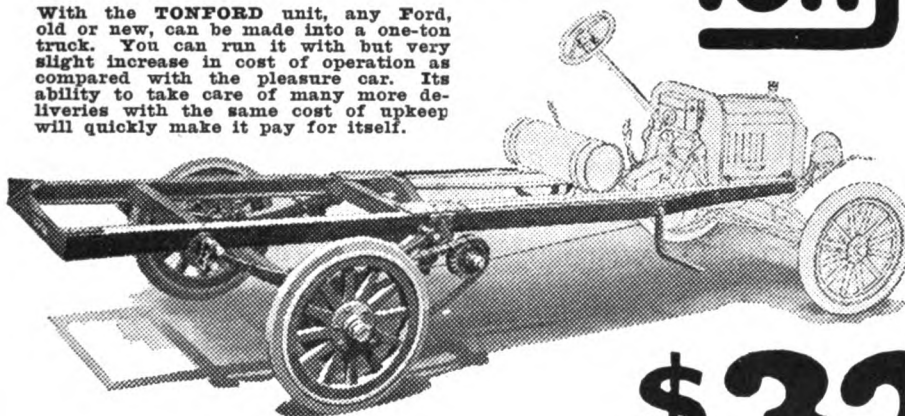
## by making a **1 TON** **TRUCK** of Your Ford



# Tonford

TRADE MARK

With the TONFORD unit, any Ford, old or new, can be made into a one-ton truck. You can run it with but very slight increase in cost of operation as compared with the pleasure car. Its ability to take care of many more deliveries with the same cost of upkeep will quickly make it pay for itself.



# \$325

F. O. B. DETROIT

Drygoods merchants, wholesalers, laundries, etc., who have been in the habit of using three or four light Ford delivery cars are now taking care of more business with much lower operating cost by using one or two TONFORDS.

No matter what your delivery or transportation problems may be, consider the advisability of investing in a TONFORD before paying the greater initial cost, as well as the greater maintenance cost of an ordinary one-ton truck.

The TONFORD unit fits on the frame of any Ford car, converting it into a one-ton truck with a 127-inch wheelbase and a loading space of from nine to eleven feet back of the driver's seat, and up to six feet wide, depending on the style of body.

The TONFORD sells for \$325.00. You can now buy a new Ford Chassis for \$325.00. The TONFORD truck unit is easily attached without changing the chassis in any way. Simply drill four holes and bolt the two frames together and you have a dependable one-ton truck with the Ford ease of control and economy of operation.

Dealers: We want representation everywhere. This is surely the "universal" truck. We are making prompt deliveries. Get in touch with us at once.

## DETROIT TRUCK COMPANY

DETROIT, MICH.

### Fire and Accident Prevention Day, October 9th

The Nation's Fire Toll, 5,000 Deaths per Year, \$500 Loss per Minute.  
Two-thirds of the Fires Are Preventable.

The Nation's Accident Toll, 35,000 Deaths per Year, 2,000,000 Injuries per Year. Two-thirds of the Accidents Are Preventable.

Stop Fires and Accidents in Your Town, Your Place of Business,  
Your Home.

**ONE DAY FOR HUMANITY**

ture to say that they have heard very little of co-insurance.

This point should be kept carefully in mind by every insurer. A building and its contents should be insured for an amount representing its reasonable worth; otherwise, the owner becomes a co-insurer with the insurance company and, in case of loss, is required to stand his proportional share thereof.

In other words, if the garageman is insured for \$5,000, it does not necessarily follow that if the loss is total he will receive \$5,000 in payment of the loss. That depends upon whether or not his loss is covered, or whether he instead has been carrying a portion of the loss himself, in which event the \$5,000 on which he has been paying a premium would be apportioned to the total value of the risk and the insured

might receive only \$4,000 or a sum equal to the amount of loss sustained on the proportion of the risk carried by the insurance company.

Therefore, in taking out insurance, garagemen, shopmen and auto dealers should obtain reliable advice and protect their property fully, unless they wish to carry a part of the risk themselves as co-insurers with the insurance company.

### CO-OPERATION FROM KANSAS

We wonder if there is need for your own Inter-Insurance Exchange? We were able to get this member a rate of 2 per cent on his building and 2½ per cent on its contents. Quite a difference between those figures and what our fellow member has to pay or go

without insurance. Here is his letter:

Mr. Charles M. Carr,  
American Association of Garage Owners,  
Chicago, Ill.

Dear Sir: Your plan of insurance among garage owners contained in your September number is an excellent idea and the garage man will no doubt obtain great benefit from an organization of this kind. Let me suggest that after you get a sufficient number of subscribers to enter your inter-insurance exchange, that a co-operative company be organized among the garage owners.

We are behind a proposition of this kind and would be glad to receive a copy of the policies you are using, just merely to cover stock and new automobiles we are carrying.

We have as modern and fireproof garage as you will find in a town of 18,000 and the rate of \$7.80 per hundred which they are imposing upon us makes insurance prohibitive.

The result being we are carrying our own insurance. Our state inspector has no mercy. If he sees an open quart can of gasoline, he raises our rate one dollar. If we can be of any assistance in getting an insurance organization started, do not hesitate to call upon us.

Unique ideas of plans and construction for garages, shops and salesrooms are being taken note of in different parts of the country and will be given attention in this department from the insurance standpoints. We would like to have readers send in rough or finished sketches of anything they believe would be of interest to us in this connection.

## M. J. Grogan, the A. A. G. O's. Fire and Casualty Insurance Underwriter

Mr. John Grogan entered the insurance business on leaving school twenty years ago. For ten years he was associated with the head office of the London Guarantee and Accident Company in Chicago. During that time Mr. Grogan gained the mastery of the statistical claims, inspecting, adjusting and underwriting departments of the business, being assistant chief of the underwriting department when he resigned in 1906.

On February 1, 1906, Mr. Grogan was appointed resident secretary of the Frankfort General Insurance Company, one of the largest casualty companies in the world, with complete supervision of the production and underwriting of all business in the state of Illinois. In six years Mr. Grogan increased the premium income from \$80,000 to \$200,000. The actual production of premiums for this period was \$900,000 and Mr. Grogan made for his company an underwriting profit on the volume of over 10 per cent, even with the very heavy expense features prevailing in those days.

He was very successful in handling



manufacturers' trades and contractors' associations in groups, thereby securing a cooperation which resulted in material reductions from the manual rates. On the passage of the Working-

men's Compensation Law in Illinois in 1913 Mr. Grogan resigned to become an independent producer and since that time has handled some of the largest lines in Illinois for both fire and casualty insurance. He has been very closely associated with the development of the automobile business in its relation to insurance, and he has some ideas based on a wide underwriting experience which will assure for this department intelligent rating and a system of claims adjustment, which will, we believe, result in a tremendous saving to A. A. G. O. members.

It was indeed fortunate that Insurance Commissioner Matthew White and Secretary-Treasurer C. M. Carr were able to secure the services of so eminent an insurance specialist as Mr. Grogan for the A. A. G. O. work on terms that will work out most satisfactory results for the garage and associated lines.

It will be of interest in this connection to state that the Insurance Exchange with which Mr. Grogan is associated is being founded and developed at not one cent's expense to the A. A. G. O.



**T**HESE illustrations show why the Gill Rings have already achieved such a remarkable success. The interlocking joints create a barrier past which the vapor cannot escape. This is not only true of new cylinders, but old ones as well. The ring is self fitting and adjusts itself to wear, even tho' the cylinders are worn as much as .031 it forms a perfect seal.

The Gill Ring combines all the advantages of the multiple piece rings with the strength, sturdiness and ease of application of one piece rings, making an ideal combination which is not equalled by any other ring on the market.

==== Order from our nearest Distributing Offices =====

BOSTON—98 Massachusetts Ave.  
BROOKLYN—36 Woodruff Ave.  
CINCINNATI—816 Union Central Bldg.  
CLEVELAND—819 Sweetland Bldg.  
DETROIT—706 Union Trust Bldg.

## The Chalsmith Co.

3701 So. Ashland Avenue  
CHICAGO, ILLINOIS

LOS ANGELES—325 Baker-Detwiler Bldg.  
MILWAUKEE—311 Majestic Bldg.  
MINNEAPOLIS—Decorah Bldg.  
SO. NORWALK, CONN.—90 Woodward Ave.

## MILEAGE GALORE

Will Run 5,000 Miles and More

These tires are of double thickness and have 12 plies of fabric; therefore no punctures, no blow-outs. They are rebuilt by our special process, vulcanized and double treaded.

30x3....\$4.50	32x3½....\$5.75	34x4....\$7.75
30x3½... 5.50	33x4..... 7.50	36x4.... 9.00

Other sizes in proportion. Write for prices today.

Send \$1 deposit for each tire ordered, and we will send the tire, balance C. O. D., subject to your examination and approval before paying for same.

### CHICAGO DOUBLE TREAD CO.

1235-39 So. Wabash Avenue

CHICAGO, ILL.

## KENNEDY Auto Storage Covers

furnish efficient protection for cars in dead storage. They are made of strong, heavy paper, properly reinforced, and in standard sizes to fit any car.

Made only by

**The Kennedy Car Liner & Bag Co.**  
SHELBYVILLE, IND.

## Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.  
Main Office, Leavitt St. and Jackson Blvd.

**Pondelick Brothers,** CHICAGO ILLINOIS

### ADDITIONS TO STANLEY GARAGE HARDWARE LINE

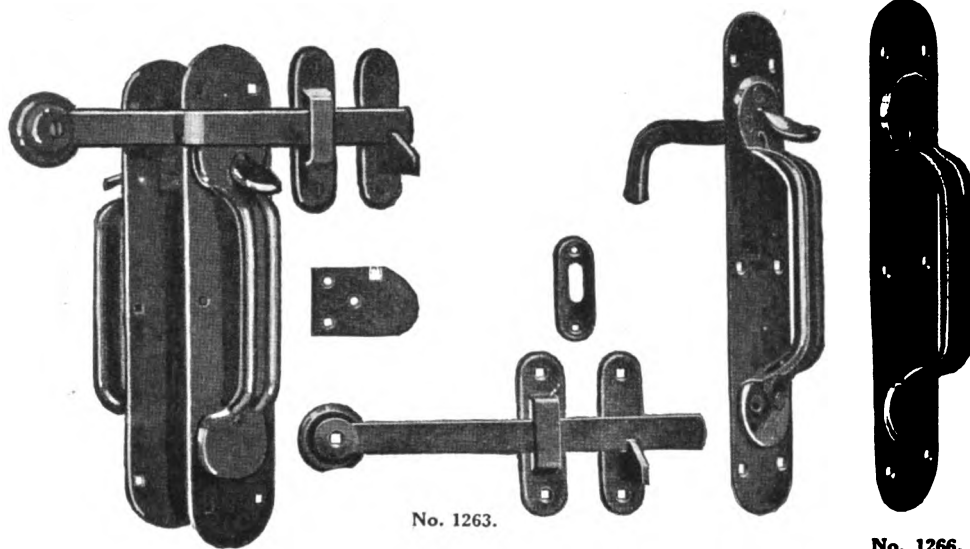
The line of Stanley garage hardware has just been rounded out by the addition of the three items here illustrated, especially designed for use on garages and other heavy doors.

The heavy escutcheon plate,  $14\frac{1}{2} \times 2\frac{3}{4}$  inches, greatly improves the appearance of these latches and pulls; and by spreading out the position of the screws and bolts over a larger

bar is 12 inches long. This latch is packed one complete set in a box with directions and screws or bolts. The gross weight of each set is  $4\frac{1}{2}$  pounds.

The heavy garage door handle or pull, No. 1266, matches No. 1263 and No. 1264 latch set, and is for use on the inside of the opposite door.

The handle is reinforced by corrugations at the points of greatest strain, and is designed to develop the full strength of the metal. The grip is of a



No. 1264.

area these escutcheons considerably increase their gripping power. These plates are equipped with combination holes for bolts or screws.

The Duplex Latch No. 1264 has two handles and thumb pieces which provide a comfortable grip in handling the garage door from either side of the entrance. It is adjustable for doors from  $1\frac{3}{4}$  to  $2\frac{1}{4}$  inches thick. The Stanley Works state that this Duplex latch can be supplied on special orders for doors of any thickness. In applying, the parts are put together without use of tools or set screws, and when once applied to the door, cannot become loose or drop out.

This latch is made entirely of heavy wrought steel and is designed for heavy service. The combination screw holes in the escutcheon plate permits securely bolting the plates together through the door, using  $\frac{1}{4}$ -inch stove bolts. The length of the bar is 12 inches.

No. 1264 is packed one set complete in a box with directions and screws. The gross weight of the set is  $6\frac{1}{4}$  pounds.

The single thumb latch set No. 1263, like all Stanley garage hardware products, is made entirely of wrought steel and will not break. It is, therefore, greatly superior to the old style of cast iron latch. The comfortable thumb piece is an additional improvement. This latch will greatly improve the appearance of the entrance to any garage. The

generous size and rounded to conform to the shape of the hand. The handle proper is  $10\frac{1}{2}$  inches long and  $1\frac{1}{4}$  wide in the middle and  $2\frac{1}{2}$  inches wide at the ends. These handles weigh  $2\frac{1}{4}$  pounds apiece and are packed two in a box with all necessary screws.

These latches and pulls are finished in dead black japan, bright japan, Stanley Sherardized and black japan over Stanley Sherardized.

A copy of the Stanley Garage Hardware Catalog, illustrating and describing the various items which comprise the Stanley Garage hardware line, will be sent free of charge to any one writing to the Service Department of the Stanley Works, New Britain, Conn.

### NUTS THAT WILL LOCK ON

Ever since machinery has been built and used, one particular problem has existed to vex and perplex the maker and user. The problem is: How to prevent the nuts from working off the bolts. It is a problem that has entailed ceaseless vigilance, for a nut that has worked off may wreck a costly machine, may pile a fast railroad train into junk, or send a great steamship and hundreds of souls to the bottom of the ocean.

Once there is a demand for an article the American inventor may be relied upon to fill it.

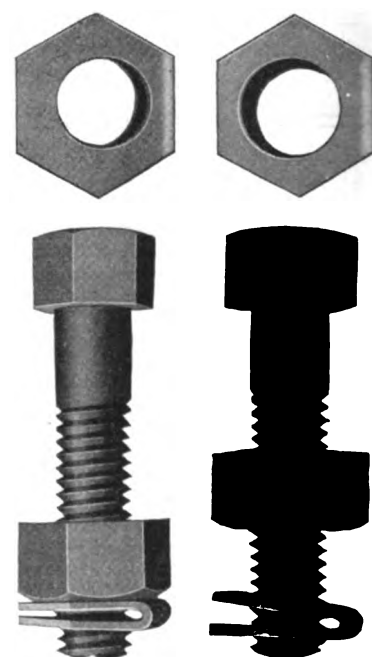
The device is not an experiment—that stage has been passed. It has been given the most rigorous tests, notably

by the superintendent of motive power and machinery of the Chicago and North Western railroad. This official tested the Lock on locomotives, trailers and crossing splice bolts, some of these tests lasting sixteen months, and not one failure was reported.

One of the fields in which the Spring Nut Lock will be especially welcomed is that of the automobile. The makers will grasp the device because of the greater safety it will give their cars, while the owners will see in it insurance against many car troubles.

The small size, simplicity, neatness and the ease with which it is affixed should immediately commend the Spring Nut Lock to every autoist.

This demand, the Spring Nut Lock Company of 608 South Dearborn street, Chicago, has prepared to meet. It has



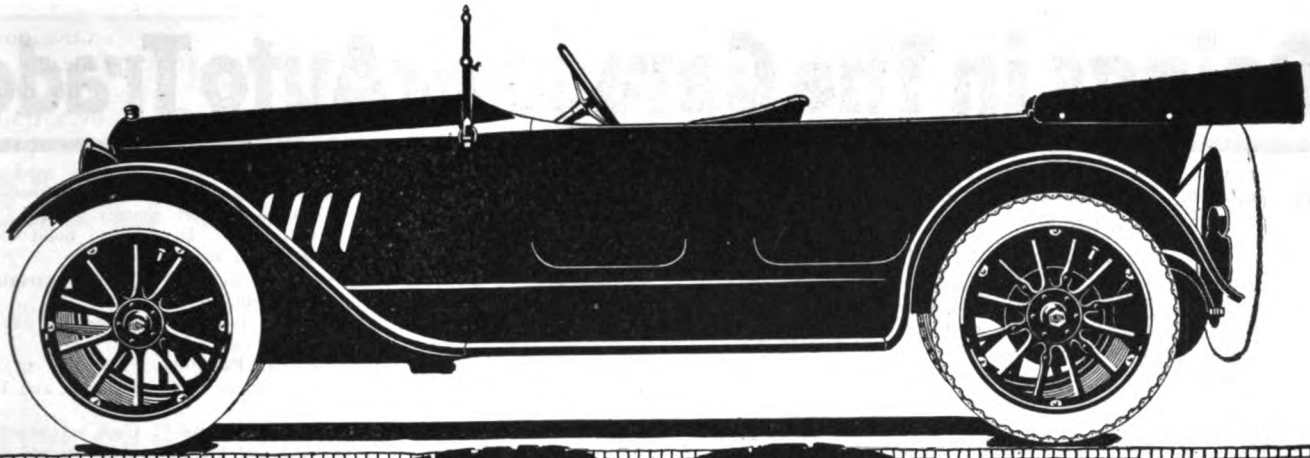
contracted with the Stowell Company of South Milwaukee, Wis., which has one of the largest industrial plants of the Milwaukee district for a large and continuous output, and this company has installed a number of the necessary machines and is now turning out the Locks in the sizes most generally used.

### ELGIN SIX RACES WITH FAST TRAIN

An Elgin six has just settled an argument about speed by a 552-mile run in the Northwest from Minneapolis to Fargo and back.

On the return trip between St. Cloud and Minneapolis, a distance of sixty-eight miles, the Elgin averaged 41.9 miles per hour, covering the distance in 1 hour and 46 minutes, thus placing it in the lead. The average speed for the entire run of 552 miles was a fraction under thirty miles per hour.





## Elgin Character



The Elgin Six is a car of refinement and distinction. It is characterized by the dependability and easy-riding qualities found only in cars of much higher price.

Big, beautiful, powerful, yet strictly a "Light Six," with mechanical construction of the highest standard, from the powerful six-cylinder valve-in-head motor to the smallest detail.

In size, appearance and mechanical qualities the Elgin Six leads the field in its price class, embodying style and values found only in other cars selling from \$200 to \$400 higher.

There are so many big special selling features in the Elgin Six that Elgin Dealers keep the wires hot calling for "More Elgins." Some desirable territory open for dependable dealers. Write or wire.

### —These Special Features Make Elgin Sales Easy—

Six-Cylinder Valve-in-head 35 horsepower Motor.

Unit Power Plant, Three-Point Suspension.

V-Type Radiator, Thermo-Syphon Cooling.

Combination Force Feed and Splash Lubrication.

Two-Unit Dyneto Electric Starting and Lighting System.

Delco Ignition System.

Stewart Vacuum Feed, Rayfield Carburetor. Springs, Semi-Elliptic Front, Self-Oiling Cantilever Rear.

Multiple Disc, Dry Plate Clutch—Steel on Raybestos.

One Man Top—Jiffy Curtains.

Quick Detachable and Demountable Rims.

114-inch Wheel Base.

Elgin Motor Car Corporation  
Chicago, U. S. A.

Five-Passenger Touring  
**\$845**

**\$845**

Clover Leaf Roadster  
**\$845**

# Doings in The Garage and Auto Trade

## New Garages, Auto Dealers, Repair Shops, Etc.

Milwaukee, Wis.—T. J. Meacy & H. Read, loosa, will open a branch garage and auto agency, with Mr. Hunt as resident manager.

Grinnell, Ia.—Lambertson & Hunt, of Oskaloosa, \$25,000 garage, Downs av. and Webster pl., in course of erection.

Harrisburg, Pa.—Harry Davis & Jefferson Hargest, to build garage costing \$5,500.

Pittsfield, Mass.—New garage building, built by George Leidhold, leased to Cadillac Co.

Binghamton, N. Y.—LaFrance Garage Co., new salesrooms opened.

Shreveport, La.—New Ray-Dickenson garage to cost \$45,000, contract let.

Hooper, Neb.—Garage building for Tunbers & Reets under way.

Springfield, O.—Two-story garage, 100-car capacity, for P. T. Ratbun & Co., on S. Spring st., completed. Haynes agency secured.

Massillon, O.—Site purchased by W. D. Strohacker, local agent for the Ford, for new \$14,000 garage and store building.

Creston, Ia.—Creston Auto Co., 104 x 120 garage, in course of erection.

Fargo, N. D.—Lake Park garage, new \$5,000 brick building, 50 x 120.

Sharon, Pa.—R-o Sales Co. formed, converting Sharon Livery into a garage.

Huron, S. D.—H. B. Millard and E. R. July form Huron Auto and Supply Co., enter garage and retail auto business. Studebaker and Maxwell agencies.

Forest City, Pa.—Concrete garage being built by Bartholomew Bros.

Fresno, Calif.—An \$8,500 garage under way for the Pecock Garage Co.

Grand Rapids, Mich.—Houser-Owens-Ames Co. erecting \$10,000 garage, 60 x 100, 2-story, on Ottawa av.

Stanton, Mich.—New brick garage under way for W. R. Beardsley.

Hancock, Mich.—Modern garage for Quincy Garage & Supply Co., in course of erection; fire-proof structure, 60 x 110.

Davenport, Ia.—Mid-West Motor Co. formed and building modern garage, 160 x 140; Stephens Six agency.

Chillicothe, Ill.—New building for Square Deal Repair Shop ready for occupancy.

York, Neb.—Modern garage and showroom of York Auto Co. opened with a dance; has Buick agency.

Rochester, N. Y.—New building for Ballasburne Motor Co. at Lake and Lyell avs., 145 x 165, modern structure, Ford and Kissell agencies, repair shop, auto supplies, etc.

Fort Smith, Ark.—Palace Garage opens for business, succeeding the old Windalow Garage on Garrison av.

Fresno, Calif.—New \$12,000 garage, 60 x 90, including showrooms and shop, in course of erection for Mrs. Lottie R. Krone.

Grand Rapids, Mich.—New Fulldight Storage Garage on Bond av. open for business.

Des Moines, Ia.—Modern garage and showrooms on East 6th and Walnut sts., completed by the Iowa Investment Co. and opened for business.

Scranton, Pa.—Curt's Garage, 63 x 173, Wyoming av., in course of erection.

Waterloo, Ia.—Waterloo Auto & Supply Co. to occupy garage on 5th and Commercial sts., nearing completion.

Boone, Ia.—Johnson, Lundell & Johnson's new garage on 8th and Arden sts. now open for business.

Havana, Ill.—White Bros. have secured lease for modern garage, 62 x 182, on Main st.

Dayton, O.—Sallie Moskowitz to build 1-story garage on Troy st.

Philadelphia, Pa.—Gomery-Schwartz Motor Car Co. to build 10-story garage, 137 x 180, on Broad and Cherry sts.

Philadelphia, Pa.—New auto block to be erected on E. 2d and Iowa sts., by Messrs. Weir & Iles, costing \$25,000.

Coshocton, O.—Warner Hay to open new vulcanizing shop on Walnut st.

Canton, S. D.—Motor Inn to open new agency for Ford cars on W. 5th st.

Rochester, N. Y.—Louis Gibaud will erect tile and brick garage, 83 x 116, on Scio st.

New Britain, Conn.—Pressed brick garage on Main st. and Sherman court for the Williams Garage.

Abingdon, Ill.—Famulener & Dennis will build double garage on N. Main st.

Three Rivers, Mich.—A. O. Shafer opens "Automobile Laundry."

Leavenworth, Kans.—Work on the Evans Garage at 4th and Cherokee sts. completed in short time.

Pittsburgh, Pa.—Aaron DeRoy Motor Car Co. started on new garage on Forbes st.

Champaign, Ill.—C. B. DeLong to open garage in Knights of Pythias bldg.

Lawrenceburg, Ind.—Knippenberg, Decker & Hauck opened garage on 3d st.

Moscow, Id.—Frost & Frost purchased corner of 2d and Washington sts., 80 x 93, and will establish garage and general repair shop.

Lake Charles, La.—Calcasieu Motor Car Co. to erect addition to garage.

Shelby, Ind.—The Singleton & Fitch Garage nearing completion.

Salt Lake City, Utah.—New Farrington Garage Co. erecting building to cost \$5,000.

Santa Fe, N. Mex.—The Raton Garage Co. to open for business soon.

Peoria, Ill.—New \$20,000 garage to be erected on Main and Douglas sts. for the Borland Electric Sales Co.

Lake Preston, S. D.—W. M. Harris's new garage ready for business. Dodge and Ford agencies.

Idaho Falls, Idaho.—The Idaho Falls Auto Co. remodeling garage; dealers in Dort Oakland, Chandler and Cadillac cars.

Gouverneur, N. Y.—The Seaker-Graves Motor Co. garage near completion.

Bloomington, Ill.—Motor Car Sales Co. to erect garage, 100x120 ft., on Washington and Lee sts., to cost \$13,000. Agents for Chalmers and Dodge cars.

## A. A. G. O. COLLECTION SERVICE COLLECTS

Stevens Point, Wis.,

Sept. 22, 1916.

American Ass'n Garage Owners,  
Chicago, Ill.

We have received payment of \$5.07 in full of our claim against Dr. ———, of Junction City, today, and wish to thank the A. A. G. O. for your prompt service.

Very truly yours,

STEVENS POINT GARAGE,  
Arthur Beijer, Manager.

Bridgeport, Conn.—Garage to be erected on Connecticut av. by T. H. Kenney.

Cleveland, O.—E. D. Kirk to build 1-story garage on Market st.

Monroe, La.—Zeigin & Renaud's garage under way, cost \$40,000.

Randolph, Neb.—E. A. Bades & Sherman Bros. to build two garages.

Philadelphia, Pa.—John F. Conlin to erect garage, 105 x 80, on Germantown av. and Duval st.

Warsaw, Ind.—Burke C. Cook purchased corner of Lake and Market sts. for garage site.

Antigo, Wis.—W. Heck to erect garage, to cost \$7,000, 50 x 124.

Los Angeles, Cal.—\$7,500 brick garage to be erected on Main st. for Philip Beyrle.

Grand Rapids, Mich.—J. F. Knowlton to erect 2-story garage at Ionia av. and McConnell st.

Albany, N. Y.—Erection of garage for John Lackey planned.

Taylorville, Ill.—J. R. Mitchell taken over Bradley Auto Sales Co. and will have agency for the Chevrolet, Kissel, Westcott and Haynes cars.

Albuquerque, N. M.—New Mexico Motor Co. opens a new garage.

Jefferson, O.—H. J. Redmond to build garage at Chestnut and Walnut sts.

Bemidji, Minn.—Bemidji Auto Co., to construct big addition to garage.

Iroquois, S. D.—New addition to the Eggleston & Reins garage, nearly completed.

Marshfield, Wis.—Work begun on remodeling and extending of Paape's Palace Garage.

Cedar Rapids, Ia.—C. F. Groll soon to build addition to garage on E. Seventh av., 60x130.

Hartford, Conn.—National Motor Vehicle Co., new addition started.

Hartford, Conn.—Thrall-Colton Motor Car Co. has new agency for Kissel car.

Lincoln, Neb.—Brooks & Balis purchased the Ryan garage on S. 11th st.

Shakopee, Minn.—William Kamp, successor to the Hurr Garage.

Auburn, Neb.—A. R. Avery assumed possession of Workman & Rozean Garage.

## Fires

Hartford, Conn.—Capital City Auto Co., tires and accessories stock and several cars totally destroyed. Loss estimated at \$20,000.

Providence, R. I.—Considerable damage done to garage of Richmond B. Bullock.

Buffalo, N. Y.—Garage of Nathan Rothenberg destroyed by fire; loss \$5,000.

Oklahoma City, Okla.—Bristow Garage and 20 automobiles burned, loss \$20,000.

Bristol, Tenn.—Sheldon's Garage, one of the largest in city, destroyed, including 6 autos and valuable equipment amounting to \$15,000.

Chicago, Ill.—Logan Square Auto Supply Co., two explosions, destroying building and 80 machines; loss \$10,000.

Chicago, Ill.—Explosion wrecked Graceland Garage, ruining 100 cars; loss estimated at \$150,000; no insurance.

Monroe, La.—Zeigin & Renaud Garage, building destroyed and one life lost; loss \$40,000.

## Miscellaneous

The Garage and Repair Men's Association of Portland, Ore., held their annual picnic at Graton's Park, Milwaukee, Sept. 16.

The Sinclair Oil and Refining will build a pipe line from Cushing, Okla., to Chicago and

# Thirty-two years of actual experience should be sufficient Why you should buy **HIGGINS QUALITY SPRINGS** **FOR REPLACEMENT**



They are guaranteed. Made without Center Bolt—Boltless. Painted Black  
**Ready for the car when needed**

"They are **strongest** where the old type of springs is **weakest**."

Higgins Quality Springs for replacements are made of the best grade of motor car spring steel of a special analysis, properly heat treated, scientifically constructed and rigidly tested for elasticity, tensile strength and anti-fatigue properties.

These are equipped with rebound clips, leaves properly lubricated with a special high grade spring lubrication before springs are assembled for shipping. It is impervious to water, **prevents rust**, and will last many times as long. This method eliminates that **squeaky** noise that is so prevalent among springs, and which tends to lower the value of a car. It is also an anti-friction preparation—a **life saver to springs**.

No better springs could be placed on a car, and the dealer and garageman who sells them for replacements will have a satisfied trade, build up a good business and make increased profits. Wire or write for our nearest distributor for quick service.

Address "Garage Dept." for the Big Catalogue B-1916, containing over 450 different kinds of Quality Springs, also for discount.

**HIGGINS SPRING & AXLE COMPANY, Racine, Wisconsin**

**MORE** { Power  
Speed  
**LESS** { Noise  
Gasoline  
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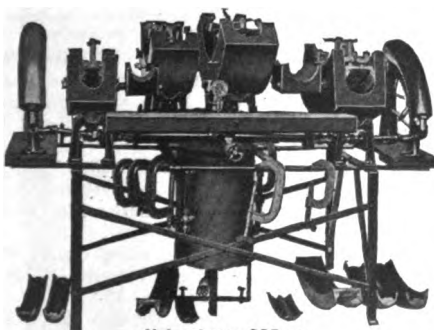
If we regrind your cylinders and fit new pistons, we furnish our Oiltight Rings at no additional cost.

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Vulcanizers \$25 up

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and 1044 S. Main Street, Los Angeles, Cal.

Lots of Work. Vulcanized Double Treads wear better, look better. This Vanderpool Vulcanizer does double treading and repairs all size case and tubes from 3 to 5-inch.

## Money Making Machines for Every Shop

For reboring old worn and scored Ford Cylinders. Enables the small shop to bore cylinders as well as the largest shops with expensive machinery.

Makes the Ford Motor like new. Reboring Ford Cylinders is a profitable business in any section.

### The Davis Milling Attachment and Compound Table

Clamps to any drill press table, with Dovetail Cross Slides, operated with screws and ball cranks, by hand. Saddle is graduated and swivels to any angle. Table is slotted for clamping down work, chuck or vise.

Especially adapted for small shops, such as blacksmiths, repairmen and automobile garages.

It will cut key seats and mill cams. For use with end mill, fishtail cutter or formed cutters.

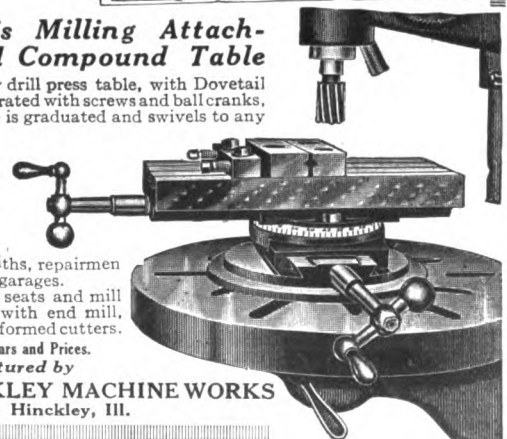
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CYLINDER  
REBORING  
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Patronize our advertisers and build up your Association and Journal

erect three refineries, one at Kansas City, Mo., one at Fort Madison, Ia., and one at Chicago.

William B. Stout, sales manager of the Scripps-Booth Motor Car Co., made a 2,100 miles trip from Chicago to Salt Lake City, averaging 220 miles a day or 32 miles an hour. The important part of the record is that he made 20.1 miles to a gallon of gasoline and only  $2\frac{3}{4}$  gallons of oil was required for the trip.

The Grant Six won the Pike's Peak Hill Climb in Class E with a piston displacement of slightly more than 180 cubic inches.

Barney Oldfield is having a new racing car built by Harry Miller, of the Miller carburetor fame, to be used at the Santa Monica grand prize and Vanderbilt cup races in November.

D. L. Watson, general sales manager of the Haynes Automobile Co., has been promoted to the assistant general managership.

Benjamin Brisco predicts that 5,000,000 automobiles will be in use in the United States by 1919.

The Stearns 1917 town car is now on exhibition at branch salesrooms and agencies.

John W. Ruse, one of the best known automobile experts in the automobile industry, died September 15 at Kenosha, Wis. He was connected with the Buick Motor Co.

American Twelve motor cars are said to be popular in Europe.

The Elgin Motor Car Co. has outgrown its administration building on Automobile Row in Chicago and now occupies an entire wing of the fifteenth floor in the McCormick building.

Harry Newman resigned from Harry Newman, Inc., after which he was re-elected to his old position. Harry ranks with the best automobile advertisers in the country.

B. M. Diver, expert body designer and engineer, has become associated with the Cole Motor Car Co. of Indianapolis.

The Field Motor Co., Grand Rapids, Mich., is building a new factory and will put on the market a new explosive motor, which will use either gasoline or kerosene. It will have only two cranks and two connecting rods for four cylinders, making it much lighter and easier of operation than the regulation motor.

The Safety First Federation of America has finished a compilation of a standard code of traffic regulations after a year's study of representative men in the motoring world. They will be distributed among state and municipal officials dealing with street traffic. This piece of work of the federation is very highly spoken of.

The Harroun Motors Corporation are putting out a new car, which will sell under \$600, and they expect to make 25,000 cars during 1917.

The Myle-Mayker Co. have placed on the market a Ford device, which consists of a gravity operated "flutter" valve controlling the richness of the gasoline mixture in inverse ratio to the speed of the engine. They are turning out large quantities of the device, which is gaining a growing and appreciative market.

The United States Motors Corporation has purchased the Lovell-McConnell Manufacturing Co. of Newark, N. J., makers of the Klaxon horn.

H. J. Hickey, Fort Dodge, Iowa, salesman for the Knight Motors Car Co., is recording the fourth patent paper on a piston valve internal combustion motor, which is said to have fewer working parts than the Knight motor and 200 fewer working parts than the poppet valve motor.

The Minnesota Tire & Rubber Co. has been organized with a capital of \$200,000 and will locate a factory at St. Paul.

The De Martini Auto Truck Co. are enlarging their factory at San Francisco, Cal.

The Unit of Fords Co. will build a factory at Jacksonville, Fla., for the manufacture of

Ford units, including seat covers, tops, delivery and commercial bodies.

The 1917 Metz touring car has been improved in appearance and the price reduced from \$600 to \$545.

The electrically equipped Saxon Four car has been reduced in price to \$495. It has a Wagner electric starter and lighter, an electric horn and a speedometer. The tires are now 30x3 inches.

The Goodyear Tire & Rubber Co. are now insisting that garages and dealers who have their agency shall carry an adequate stock and do business in a thoroughly business manner. It is estimated that there are from 25,000 to 30,000 Goodyear dealers in the United States and Canada. The new dealers' contract does not give exclusive territory. The Goodyear company plan to decrease the number of dealers and increase the quality of service.

The Pennsylvania Rubber Co. has announced a reduction in tire prices, effective October 1.

An Oakland Six took first honors in a race at Rolfe, Iowa, making five miles in 7:15 minutes.

The Ackerman Wheel Co., a \$2,500,000 corporation, will erect a \$250,000 plant at Cleveland and manufacture a spring wheel for motor cars.

Pneumatic tires for auto cars are twenty years old and the Winston company was the first car makers in America to use them.

The Hudson supersix, which broke all records from San Francisco to New York, has broken them again on the return trip, beating the west-bound record by fifty-seven minutes. The original Royal cord tires on which the car left New York arrived in San Francisco in perfect condition. The drivers report but three punctures along the route, which entailed no delay.

Garagemen and users of motor trucks will be interested in knowing the results obtained from the tests made by the United States army in Mexico. Round trips were made between Columbus, N. M., and Colonia Dublan, Mexico, a distance of 296 miles. A  $1\frac{1}{2}$ -ton Lippard-Stewart truck, which had been run over 10,000 miles, was among the trucks making the test trip and in spite of the severe tests and the length of service, there was not a loose rivet in any part of the car when the trip was completed. The car has made a total of nine round trips between Columbus and Colonia Dublan and is still going.

### GOOD FOR BOTH EMPLOYER AND EMPLOYEE

The first copy of the American Garage and Auto Dealer reached me this month, and I must say that I have given this little magazine more careful consideration than any magazine of its class that has ever come before me. The principles and purposes which you have set out in this magazine appeal to me very strongly.

The American Association of Garage Owners with its various departments appeal to me as being an association from which both the employer and the employee receive equal benefits. Kindly mail me literature and price list covering metal and glass signs and copy of by-laws of the association.

R. BLAINE JORDAN,  
Sonora, Tex.

## New Patents Granted

**Brief Titles With Numbers Enabling the Reader to Send to Us for Complete Description—Enclose 10c Each to Cover Government Cost**

1,199,138. Headlight-reflector. Ernest F. Wiederholdt, St. Louis, Mo. Filed February 28, 1916. Serial No. 80,917. (Cl. 240—41.)

1,199,386. Carbureter. Basil Kamenski, Moscow, Russia. Filed January 26, 1915. Serial No. 4,571. (Cl. 123—123.)

1,198,812. Pneumatic tire. Adéard Bagné, Montreal, Quebec, Canada, assignor of one-half to Anna Bric, Montreal, Quebec, Canada. Filed March 6, 1916. Serial No. 82,389. (Cl. 152—18.)

1,199,154. Spring-wheel. Lewis P. Buck, Wilmington, Del. Filed January 28, 1914. Serial No. 814,935. (Cl. 152—28.)

1,199,219. Anti-rattling device for automobiles or other vehicles. Walter G. Swift, Providence, R. I. Filed November 6, 1913. Serial No. 799,454. (Cl. 21—8.)

1,199,189. Carbureter. Oscar Kersten, Berlin, Germany. Filed December 8, 1913. Serial No. 804,478. (Cl. 48—155.1.)

1,199,071. Non-glaring headlight. Martin L. Heckert, Mount Carmel, Pa. Filed November 19, 1915. Serial No. 82,335. (Cl. 240—41.)

1,199,402. Automobile-lock. John Merschdorf, Chicago, Ill. Filed January 21, 1916. Serial No. 73,347. (Cl. 70—90.)

1,199,210. Electric-lighting system for automobiles. Harry W. Shryock, Everson, Wash. Filed August 26, 1915. Serial No. 47,393. (Cl. 171—97.)

1,199,547. Motor-vehicle. Robert H. Hassler, Indianapolis, Ind. Filed April 7, 1916. Serial No. 89,657. (Cl. 21—182.)

1,199,541. Spark-plug and method of manufacturing spark-plugs. Frederick M. Furber, Revere, Mass. Filed January 20, 1916. Serial No. 73,240. (Cl. 123—169.)

1,199,292. Locking system for automobiles. John E. Minor and Carl M. Page, Kansas City, Mo., assignors, by mesne assignments, to The Universal Safety Lock Company, a corporation of Illinois. Filed December 17, 1913. Serial No. 807,291. Renewed February 25, 1916. Serial No. 80,553. (Cl. 175—282.)

1,199,497. Automobile-top. John B. Richards, Springfield, Mass. Filed September 22, 1915. Serial No. 50,012. (Cl. 2—62.)

1,199,264. Vehicle-tire. Hans E. Grabau, Long Island City, N. Y. Filed May 18, 1916. Serial No. 98,389. (Cl. 152—13.)

1,199,559. Vehicle-lock. William D. Jones, New York, N. Y., assignor of one-half to Isaac N. Williams, New York, N. Y., and one-half to Thomas K. Stewart, Brooklyn, N. Y. Filed October 21, 1915. Serial No. 57,168. (Cl. 70—90.)

1,199,538. Internal-combustion engine. Hugh Francis Fullagar, Gateshead, England. Filed April 10, 1915. Serial No. 20,455. (Cl. 123—51.)

1,199,604. Attachment for automobiles. Jackson W. Posey, Courtenay, N. D. Filed January 5, 1916. Serial No. 70,455. (Cl. 21—148.)

1,198,843. Automobile-locking device. Charles F. Hauck, Boulder, Colo. Filed December 6, 1915. Serial No. 65,385. (Cl. 70—90.)

1,198,474. Carbureter. Thornd Odee, Albert Lea, Minn., assignor to Kemper-Odee Engine Company, Albert Lea, Minn. a corporation of Minnesota. Filed June 15, 1914. Serial No. 845,107. (Cl. 48—155.)

1,199,008. Sander for automobiles. Roy H. Hose and James Ray Kingsley, Rochester, N. Y. Filed January 22, 1916. Serial No. 78,632. (Cl. 105—180.)

1,198,493. Automatic lock-valve. Wesley Webber, Kearney, N. J. Filed February 21, 1914. Serial No. 820,355. (Cl. 194—90.)

1,198,457. Piston-ring. Clarence B. Knodle, Rockford, Ill., assignor of one-half to Herman W. Florin, Rockford, Ill. Filed September 24, 1915. Serial No. 52,412. (Cl. 121—108.)



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**O**UR new preparation—Johnson's Carbon Remover—is ready for the market.

We have made exhaustive tests under all conditions and pronounce it "Perfect"—which it must be before it can go out under the name of "Johnson".

If you will sign and mail us the coupon—we will send you a **pint free by prepaid express**—this is enough for thoroughly cleaning the carbon from a six cylinder car.

**UNCONDITIONALLY GUARANTEED**

We guarantee the article and sale of Johnson's Carbon Remover without equivocation. It is absolutely fool-proof—no matter how much you use and how you use it—Johnson's Carbon Remover cannot injure any part of the motor. You could soak an engine in it for days without the slightest injury.

**NO EQUIPMENT EXPENSE**

You don't have to buy anything except Johnson's Carbon Remover to remove carbon—not even an oil pump is necessary—so why pay from \$5.00 to \$25.00 for carbon removing equipment.

No matter how choked up a motor may be—Johnson's Carbon Remover penetrates, and softens the carbon so that it blows out as the car is operated. It isn't necessary to lay up your customers' cars for removing the carbon—simply pour in Johnson's Carbon Remover and blow it out at your convenience—any time after 2 hours—you may leave it in all night if more convenient.

**WILL BE NATIONALLY ADVERTISED**

Johnson's Carbon Remover will be very extensively advertised in the leading motor papers, magazines and weeklies. There is bound to be a large demand for it. We want you to know about this wonderful new product so you can recommend it to your customers—either doing it for them or selling them the material to use themselves—either way there is money in it for you.



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Please send me a pint of Johnson's Carbon Remover free by prepaid express. I agree to try it and report results just as I find them. If your Carbon Remover gives as good results as you claim I shall consider the matter of stocking.

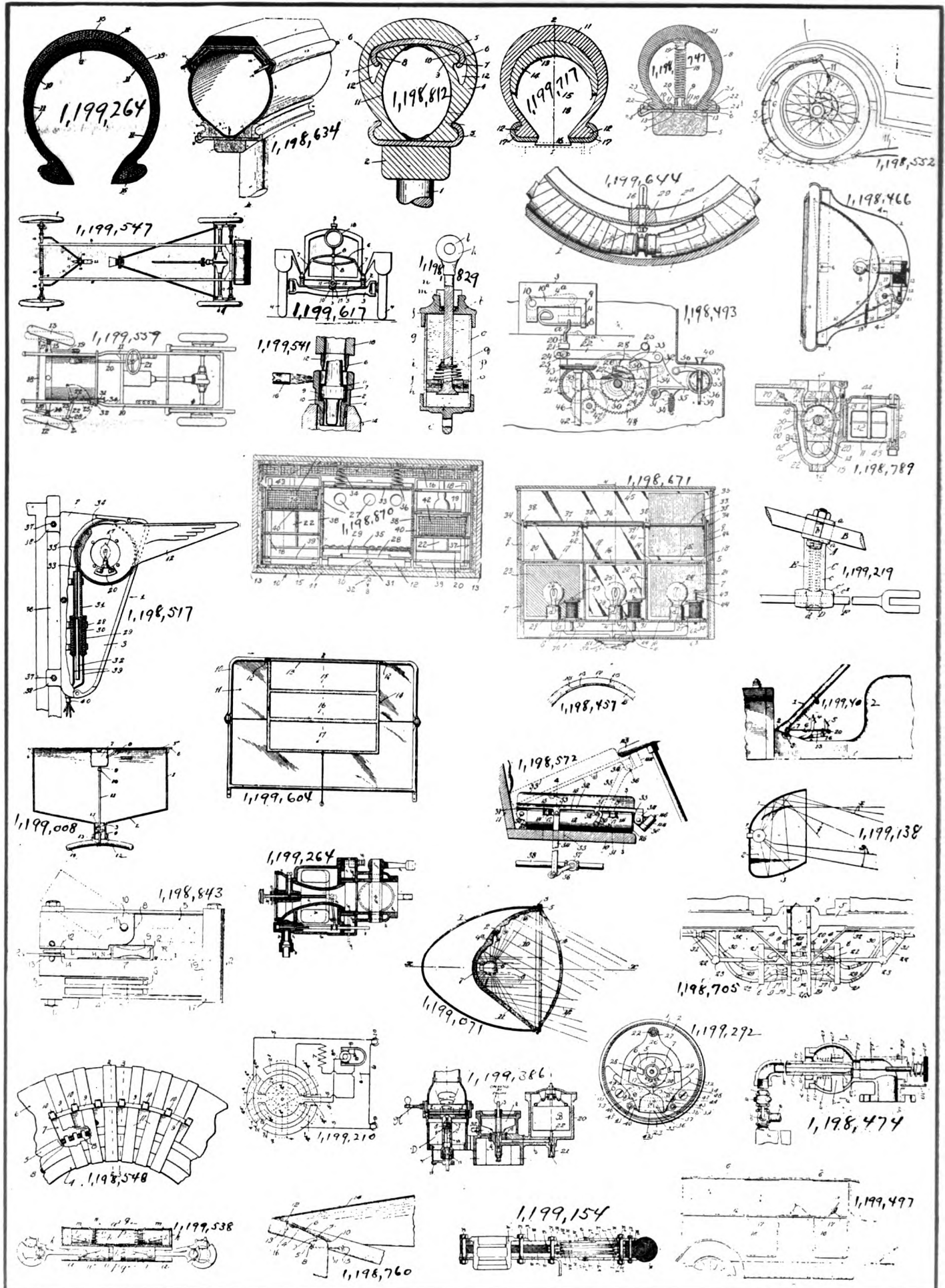
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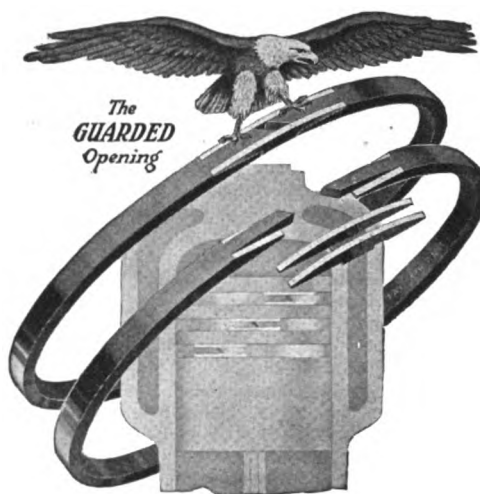
## The Motor Is as Efficient as Its Piston Rings—No More

It may have been built after the latest and most approved designs. The greatest care and most skillful mechanics may have been employed. The costliest materials may have been used. But if it is equipped with common, leaking Piston Rings you can safely discount its performance, its life and its possible minimum up-keep at least 25 per cent.

There's not an American make of automobile of any note but what has been equipped with

## Burd High Compression Piston Rings

either as Standard Factory parts, in service station replacements or in private repair. And every car so equipped is a better, more economical car because of its Burd Rings. Properly installed, Burd Rings are warranted to produce higher compression and more power with less fuel and oil than any other piston ring made. That's not a claim, mind you, but an absolute warranty legally obligating us to return your money if the rings fail to make good. We know of no other piston ring manufacturer willing to back his product to the same extent. Ask us for the evidence.



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Dallas, Tex.	819 Wilson Bldg.	Pittsburgh, Pa.	904 East End Trust Bldg.
Detroit, Mich.	578 Woodward Ave.	Portland, Ore.	816-817 Lewis Bldg.
Kansas City, Mo.	216 Rialto Bldg.	Rochester, N. Y.	558 Lyell Ave.
Los Angeles, Cal.	316-317 Hass Bldg.	St. Paul, Minn.	147 W. Sixth St.
Milwaukee, Wis.	813 Grand Ave.	San Francisco, Cal.	841 Phelan Bldg.
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you install a compelling, trade-attracting Federal Electric Sign on the front of your garage.

You want more business — this is one of the best and cheapest ways to get it. Your Electric Sign is your trade mark. It impresses *your* garage indelibly on the automobile owner. It is the surest, quickest and the most economical means of keeping before the public.

Let us show you how cheaply and how effectively we can carry out your ideas. Address Department S.

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Edison Building, 72 West Adams Street, CHICAGO

1,198,870. Automobile-refrigerator. Charles G. Rilling, San Antonio, Tex. Filed August 18, 1915. Serial No. 785,850. (Cl. 217-7.)

1,198,829. Shock-absorber. Thomas L. Edwards, Peterboro, Ontario, Canada. Filed April 1, 1915. Serial No. 18,622. (Cl. 21-105.)

1,198,466. Vehicle-headlight. Clayton F. Macdonald, Cleveland, Ohio. Filed January 21, 1916. Serial No. 73,845. (Cl. 340-41.)

1,198,517. Signal apparatus for automobiles. Frederick L. Bixby, State College, N. M. Filed March 13, 1916. Serial No. 83,907. Cl. 177-330.)

1,198,572. Automobile-lock. Christian Alfred Petersen, Beverly, Mass. Filed November 16, 1915. Serial No. 61,828. (Cl. 21-90.)

1,198,705. Automatic coupling. Benjamin W. Davis, Evanston, Wyo. Filed November 30, 1915. Serial No. 64,288. (Cl. 188-13.)

1,198,671. Automobile-signal. Edward T. Sherman, Denver, Colo., assignor to The Sherman-Crane Automobile Signal Company, Denver, Colo., a corporation of Colorado. Filed April 12, 1915. Serial No. 20,632.

1,198,760. Supplementary windshield for automobiles. Harry M. Pollock and Peter Craddock, Cincinnati, Ohio; said Craddock assignor to said Pollock. Filed September 22, 1915. Serial No. 52,079 (Cl. 21-148.)

1,198,548. Attachment for auto-tires. Albert G. Holen, Northfield, Wis. Filed March 7, 1916. Serial No. 82,692. (Cl. 152-24.)

1,198,634. Pneumatic tire. Calvin P. Hensley, San Francisco, Cal. Filed April 26, 1915. Serial No. 23,855. (Cl. 152-19.)

1,198,552. Automobile emergency-tread. Grant D. Hutchinson, Pavilion, N. Y. Filed June 9, 1915. Serial No. 33,125. (Cl. 152-14.)

1,198,747. Tire. Benjamin C. Mudge, North Brookfield, Mass. Filed November 20, 1913. Serial No. 802,034. (Cl. 152-8.)

1,198,739. Carbureter. Oren Teed, Los Angeles, Cal. Filed October 19, 1915. Serial No. 56,804. (Cl. 48-150.3.)

1,199,644. Inner tube for automobile-tires. Cyrus S. Wert, Kendallville, Ind. Filed April 24, 1915. Serial No. 23,695. (Cl. 152-8.)

1,199,717. Vehicle-tire. David H. Shapiro, Montreal, Quebec, Canada. Filed June 22, 1916. Serial No. 150,218. (Cl. 152-5.)

1,199,617. Device for controlling automobile-headlights. Harry E. Sanders and Edwin R. Talley, Grinnell, Iowa. Filed December 4, 1915. Serial No. 65,086. (Cl. 240-62.)

## COLD WEATHER BRINGS WINTER TOP BUSINESS

The arrival of a suggestion of cold weather impresses the automobile owner with the necessity of having his car fixed for winter. To be sure this is accomplished, it is necessary the work be given out early enough to be finished before the rush begins.

Garage owners should keep this fact in mind and urge prospective buyers to get their orders in early. They will thank you for it when cold weather of the zero type is here.

Many garagemen and dealers have already begun to feel an increase in winter top business even this early and expect during the course of the next two or three weeks to have a waiting list.

Patronize advertisers in this journal and thereby help finance our Association and its activities.

## GASOLINE PRICE-FIXING IN GEORGIA

The Johnson-Gewinner Company, Atlanta, Ga., report that the three great producing oil and gasoline companies operating in that state have refused to sell them gasoline at wholesale prices because they insist on retailing it at a figure one cent below the regular retail market price. The heads of the supply house at Atlanta have asked William J. Harris of the federal trade commission to investigate what they charge to be a combination in restraint of trade.

In an attempt to reduce the present local gasoline rate, the retail company in question, after buying at the regular wholesale price, has been retailing at 1 cent above that figure, while their competitors charge 2 cents above cost price. In their complaint to Mr. Harris the retail firm charge that two of the three great wholesale companies refused point blank to sell them more gasoline at wholesale prices, while the third agreed to supply them, provided they would raise their retail price to conform to other retailers' prices in Atlanta. This the retailers did not agree to do, and the wholesaler finally resumed service.

Numerous instances were cited to Mr. Harris where they have been penalized because they fix the retail rate to suit themselves. Just at present they are being supplied at the regular price, although they continue to deliver to the consumer at 1 cent below the market price.

The trade commission has been asked to effect some sort of guarantee that complainants may not be cut off from their supply at the pleasure of the producing companies.

The complaining company now states that the commissioner promised an investigation and said he would ask the wholesaler to continue to supply the complainant as a "personal favor" to Mr. Harris. Mr. Harris denies this with emphasis.

## DEALER MOTORS IN OVER 20 STATES IN 30 DAYS

M. H. Carpenter, Chalmers dealer in Wichita Falls, Texas, didn't propose to bank on the trainmen's strike being called off when he was about to start for Detroit, September 3rd, so he jumped into a Chalmers six-30 taken from a shipment of eighteen which had just arrived and without any special preparation, he and three friends started on a tour north.

"We had only a few hours to get under way and were somewhat fearful of taking a brand new car over rough country roads," said Mr. Carpenter on his arrival in Detroit. "But our fears were groundless.

"The 2,050-mile drive to Detroit was

made in just sixty hours' running time. One hundred and fifteen miles of the trip included plowing through six-inch gumbo in Iowa and Illinois, but we obtained the fine average of seventeen and one-half miles per gallon of gasoline and 940 miles per gallon of lubricating oil."

## LEXINGTON-HOWARD ADDS RAYFIELD EQUIPMENT

Dependable equipment found in car specifications is usually the surest sign of ultimate success in a field where competition is spelled in capital letters. Now comes the Lexington-Howard announcing the adoption of Rayfield carburetors as a complement of a good engine. Incidentally, it is noteworthy that additions of this kind are being announced frequently, a tendency resulting from the great changes taking place in the automobile industry, requiring a greater efficiency and refinements in cars that have become practically standard.

## OWNERSHIP AND MANAGEMENT OF THIS JOURNAL, ETC.

Of American Garage and Auto Dealer, published monthly at Chicago, Ill., for October, 1916.

STATE OF ILLINOIS } ss.  
COUNTY OF COOK }

Before me, a notary public in and for the state and county aforesaid, personally appeared C. M. Carr, who, having been duly sworn according to law, deposes and says that he is the editor and general manager of the American Garage and Auto Dealer and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, embodied in section 443, postal laws and regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor and business manager are:

Publishers, American Association of Garage Owners, 58 West Jackson boulevard, Chicago, Ill. Editor and general manager, Charles Mylert Carr, 58 West Jackson boulevard, Chicago, Ill.

Managing editor, C. M. Carr, 58 West Jackson boulevard.

Business manager, J. R. Hastie, 58 West Jackson boulevard, Chicago, Ill.

2. That the owners are (give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock): American Association of Garage Owners, 58 West Jackson boulevard, Chicago, Ill. (a corporation not for profit; no stockholders). John C. Phelan, president; C. M. Carr, secretary and treasurer; both 58 West Jackson boulevard.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are (if there are none, so state): None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees hold stock and securities in a capacity other than that of a bona fide owner, and this affiant has no reason to believe that any other person, association or corporation has any interest, direct or indirect, in the said stock, bonds or other securities than as so stated by him.

C. M. CARR, Editor and General Manager.  
Sworn to and subscribed before me this 5th day of October, 1916.

(SEAL) WALTER BROWN.  
(My commission expires June 3, 1918.)

# Empire Tires

WEAR  
LONGEST



If it's Red  
it's an  
**Empire  
Tire**

**EMPIRE RUBBER & TIRE CO.**  
1627 Michigan Ave. Chicago, Illinois

## SHALER Tire Repair Outfits

### Improved Wrapped Tread Method Used by Big Tire Manufacturers

Does better work than the big, high-priced vulcanizing outfits costing 3 to 5 times as much, and does it at lower cost. A boy can use it. It's the only vulcanizer that has Automatic Heat Control, and, therefore, can't undercure or overcure a tire. No watching or regulating. Steam or electric heat.

### Write for Catalog

Send at once for the new Shaler catalog, the most complete Vulcanizer Catalog ever published, and ask for the low discount price of the Shaler Tire Repair Outfit. We will also send repairmen our book, "Common Sense About Tire Repairs," on request.

C. A. Shaler & Co., 360 Fourth St., Waupun, Wis.  
The Largest Manufacturers of Vulcanizers in the World



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### THINK THIS OVER—

Do you keep as careful a check on how your employees spend their valuable time as you do upon your cash? WHY NOT? Their time has a high cash value to you. A few minutes a day lost through lack of automatic supervision soon adds up into a heavy cash loss.

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are as important in time checking as the cash register is in cash checking. They relieve high-salaried foremen of much unnecessary supervision—they keep your workers up to top-notch production—they weed out the "drones." Time Recorders, Stamps, Clocks, etc., for every timing purpose. Moderately priced. Write us today. **Interesting Booklets Free!**

**BAIRD EQUIPMENT CO.**  
322 W. Ohio St., Chicago  
Phone, Superior 9071



# Modern Garage Service

**W**HETHER it be an electric or gas garage nowadays, many things are expected by customers that were not thought of a few years ago. Garage operators have been compelled to assume obligations and liabilities in the handling and delivering of cars to customers they never dreamed of. For instance, hikers were only for electrics just a short while back, now gas garages use them to hold their trade. We know hikers have accidents causing sometimes severe losses to the garage owner.

Our ILLINOIS GARAGE OWNERS' POLICY completely covers the needs of the garage owner, even with a livery in connection. It is but one policy but it covers NINE hazards.

*Write us for further Information.*

## AMERICAN AUTOMOBILE INSURANCE COMPANY

HARRY M. McCONNELL, General Agent

516 National Life Bldg.

Chicago, Illinois

# A Review of The Market

## Gasoline

Gasoline prices have held steady during the past month and are without quotable change at 16½c in tank wagons Chicago, 22c New York, 23c Boston, 22c Philadelphia, 21c Pittsburgh, 21c Cleveland, 16½c Detroit, 14.2c St. Louis, 16½c Kansas City.

The feature of the market is the decline in production of crude oil and the firming up tendency which has developed. This is expected to result in an advance in crude prices, at least in the mid-western fields, and such an advance will doubtless ultimately effect the crude market generally. With the advance in crude values, all hope of a further reduction in gasoline prices goes glimmering.

The question of most moment in the petroleum oil industry is the fixing of a standard of quality for gasoline. The Washington representative of this journal mentions the subject matter referred to in his letter this month, and states that the Bureau of Standards is at work on the problem and that successive developments are expected from now on until the question of what is gasoline and what is not has been determined.

## Iron, Steel and Metals

The market for these products is active and strong, with very little change in quotations. Export buying has been renewed with basic and Bessemer pig iron advancing. Domestic buying for delivery after the turn of the year has slowed up, but current deliveries are improving. There is an element who are not anxious to contract for future delivery but feel disposed to take the market as it comes.

Copper continues in a strong position with demand in excess of supply. The feature of the month was a contract of about a half million pounds entered by the entente allies for shipment to war-stricken Europe. It is stated that the principal copper producing companies joined in closing this contract. It is also stated that the allied governments will be out of the market for copper for at least six months. Domestic consumers have been buying freely.

Tin is quiet, although a little more activity is shown than a month ago. The undertone is good.

Aluminum is without new feature. Old metals show a firm market situation.

The subjoined statement of prices is compiled by one of our staff experts:

	Sept. 27, 1915.	Sept. 29, 1915.
<b>Pig iron, per gross ton—</b>		
No. 2 X, Philadelphia.....	\$19.50	\$18.26
No. 2, Valley furnace.....	18.50	14.75
No. 2, Southern Cincinnati.....	17.40	14.40
No. 2, Birmingham, Ala.....	14.50	11.50
No. 2, furnace, Chicago.....	18.00	14.85
Basic, delivered, eastern Pa.....	19.75	17.00
Basic, Valley furnace.....	19.00	15.00
Bessemer, Pittsburgh.....	22.95	18.95
Malleable Bessemer, Chicago.....	19.00	15.00
Gray forge, Pittsburgh.....	19.20	14.70
L. S. charcoal, Chicago.....	19.75	15.75
<b>Billets, etc., per gross ton—</b>		
Bessemer billets, Pittsburgh.....	45.00	24.50
O.-h. billets, Pittsburgh.....	45.00	25.00
O.-h. sheet bars, Pittsburgh.....	45.00	25.00
Forging billets, base, Pittsburgh.....	69.00	33.00
O.-h. billets, Philadelphia.....	48.00	30.00
Wire rods, Pittsburgh.....	55.00	30.00
Finished iron and steel, per lb. to large buyers—		
<b>Cents</b>		
Bessemer rails, heavy, at mill.....	1.47½	1.25
O.-h. rails, heavy, at mill.....	1.56½	1.34
Iron bars, Philadelphia.....	2.659	1.509
Iron bars, Pittsburgh.....	2.60	1.35
Iron bars, Chicago.....	2.35	1.35
Steel bars, Pittsburgh.....	2.60	1.35
Steel bars, New York.....	2.769	1.569
Tank plates, Pittsburgh.....	4.00	1.35
Tank plates, New York.....	4.169	1.569
Beams, etc., Pittsburgh.....	2.75	1.35
Beams, etc., New York.....	2.769	1.569
Skelp, grooved steel, Pittsburgh.....	2.35	1.35
Skelp, sheared steel, Pittsburgh.....	2.45	1.40
Steel hoops, Pittsburgh.....	3.00	1.40
<b>Sheets, Nails and Wire, per lb. to large buyers—</b>		
Sheets, black, No. 28, Pittsburgh.....	3.00	1.90
Galvanized sheets, No. 28, Pitta.....	4.95	3.50
Wire nails, Pittsburgh.....	2.60	1.75
Cut nails, Pittsburgh.....	2.60	1.60
Fence wire, base, Pittsburgh.....	2.55	1.60
Barb wire, galvanized, Pitta.....	3.45	2.60
<b>Old material, per gross ton—</b>		
Iron rails, Chicago.....	\$19.15	\$13.50
Iron rails, Philadelphia.....	20.00	18.50
Carwheels, Chicago.....	11.75	19.00
Carwheels, Philadelphia.....	15.50	14.00
Heavy steel scrap, Pittsburgh.....	16.50	14.25
Heavy steel scrap, Philadelphia.....	14.75	15.00
Heavy steel scrap, Chicago.....	16.25	11.75
No. 1 cast, Pittsburgh.....	15.00	13.00
No. 1 cast, Philadelphia.....	16.00	14.00
No. 1 cast, Chicago (net ton).....	12.85	10.50
No. 1 R. R. wrot, Philadelphia.....	20.00	16.50
No. 1 R. R. wrot, Chicago (net ton).....	16.50	11.00
<b>Coke, Connellsville, per net ton at oven—</b>		
Furnace coke, prompt.....	3.00	1.70
Furnace coke, future.....	2.85	2.25
Foundry coke, prompt.....	3.25	2.15
Foundry coke, future.....	3.50	2.40
<b>Metals, per lb. to large buyers—</b>		
Lake copper, New York.....	28.00	18.00
Electrolytic copper, N. Y.....	28.75	18.00
Spelter, St. Louis.....	9.00	14.50
Lead, St. Louis.....	6.85	4.42½
Lead, New York.....	7.00	4.50
Tin, New York.....	38.62½	33.25
Antimony, Asiatic, N. Y.....	11.00	28.00
Tin plate, 100-lb. box, Pittsburgh.....	\$5.75	\$3.15

## The Stock Market

The motor car and accessory stocks have been active during the month and, while there have been some few ups and downs, general quotations have been steady and show little change. Speculative fever is not quite so high as it was a month or so ago, as the investing public are gaining a more substantial view of these securities and are more careful when placing their money. The new and more speculative stocks are selling well, but the class of buyers has greatly improved. The "sucker" element have been attracted to other quarters. A. A. G. O. mem-

bers who are considering an investment will be given the best information we have at hand, as we desire to prevent any money from our industry getting into the hands of fly-by-night promoters with ideas that are effemeral and certain not to work out in practical results, and the skin-game brokers who represent them.

Following is the latest list of quotations issued by John H. Powers & Co., Chicago and New York:

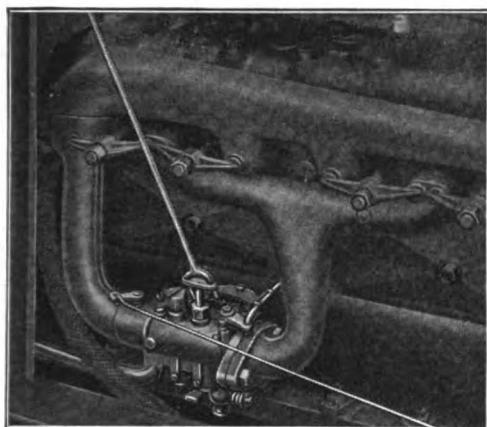
	Par	Bid	Asked
Allen Motor.....	\$10	...	\$100
American Motor Truck Co.....	10	...	5
Bour-Davis.....	10	...	12.50
Briscoe Motor, common.....	100	\$50	54
Briscoe Motor, preferred.....	100	...	...
J. I. Case, preferred.....	100	79	89
Chalmers Motor Co., com.....	100	167	169
Champion Auto Equipment.....	1	.80	.97½
Chandler Motor Co.....	100	105	105
Chvrolet Motor Co.....	100	204	208
Coe.....	1	...	.37
Cole Motor Co.....	100	...	10
Continental Motor, common.....	100	87	37½
Continental Motor, preferred.....	100	91	94
Electric Storage Battery Co.....	100	...	67½
Emerson Motors Co., pfd.....	10	...	10
Emerson Motors Co., com.....	10	...	6
Essex Motor.....	...	...	75
Farmack.....	1	...	.86
Federal Air Craft Motor Co.....	10	...	5
Federal Truck.....	10	78	82
Firestone Tire & Rubber Co., common.....	100	890	...
Firestone Tire & Rubber Co., preferred.....	100	112	...
Fisk Rubber Co., common.....	100	...	136
Ford Motor of Canada.....	100	340	355
Fostoria Light Car, preferred.....	100	...	100
Fostoria Light Car, common.....	100	...	100
General Motors, common.....	100	797	740
General Motors, preferred.....	100	126	127
Goodyear Tire, preferred.....	100	106¼	...
Grant Motor Co., common.....	10	...	10½
Gray & Davis, common.....	100	...	29
Hendee Manufacturing, com.....	100	28	32
Hendee Manufacturing, pfd.....	100	96½	99
Hupp Motor Co., common.....	10	6¼	6¾
International Motor, common.....	100	...	6¾
International Motor, pfd.....	100	...	17
Kelly-Springfield Tire, com.....	100	82¾	83
Kelly-Springfield Tire, 1st pf.....	100	95	97¼
Kelsey Wheel Co.....	100	98	98
Lee Tire & Rubber, common.....	100	44	44½
Locomobile Co., common.....	100	20	22½
Maibohm Motors Co.....	10	...	9
Maxwell Motors, common.....	100	94	95
Maxwell Motors, 1st pfd.....	100	86	87
Maxwell Motors, 2nd pfd.....	100	57	58
Miler Rubber Co., common.....	100	275	280
Mitchell.....	...	...	67
Motor Products.....	...	...	64
National Rubber.....	...	...	6½
Packard Motor Car Co., pfd.....	100	101	102½
Paige-Detroit.....	10	...	49
Peerless Truck & Motor.....	50	...	25
Perfection Tire & Rubber.....	1	90	...
Portage Rubber Co., com.....	100	65	75
Portage Rubber Co., pfd.....	100	101	105
Princess Motor.....	1	...	1
Regal Motor, preferred.....	100	18	26
Reo Motor Car.....	10	42	43
Richard Auto Mfg. Co.....	10	...	21
Saxon Motor Car.....	100	80	82
Simplex Auto Co.....	100	80	...
Springfield Body, preferred.....	...	...	127
Springfield Body, common.....	...	84	86½
Sterling.....	10	10	11
Standard Motors.....	10	...	8¾
Stewart-Warner Speed. Corp., common.....	100	108	110
Stewart-Warner Speed. Corp., preferred.....	100	108	110
Stromberg Carburetor.....	...	48¼	44
Studebaker Corp., common.....	100	120	124
Stutz Motor.....	...	72¾	73¼
Sun Motor Co.....	100	...	105
Swinehart Tire & Rubber Co.....	100	85	86
United Motors.....	10	66	67½
Universal Motors.....	5	8	8½
White Motor Co., common.....	100	64	54½
Willys-Overland, common.....	100	46¼	48
Willys-Overland, preferred.....	100	...	104
Woods-Mobilette, new.....	1	.07	.08½

Authorized capacity, shares outstanding, dividend rates and other information supplied A. A. G. O. members on request.



## Model N Marvel Carburetor

Designed especially for Ford Cars.  
Fits right in place of regular installation, no changes whatsoever.



Model E Marvel Carburetors are standard on Buick, Olds, and Oakland.

Model E Marvel Carburetors greatly improve Overland and Studebaker cars. Catalog on application.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retail for \$8.00 complete.

**MARVEL CARBURETOR COMPANY**  
FLINT, MICHIGAN, U. S. A.



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Lighting  
and  
Ignition  
Batteries**

**Batteries and Supplies**  
carried in Stock at our

## Service Station

Every Garage Owner should have information about the Edison Battery on his desk.

Write us.

**EDISON STORAGE BATTERY CO.**  
Orange, N. J.

Chicago Address: 2025 Michigan Avenue

## Jobs Await Skilled Mechanics in Detroit Factories

**¶ Come to Detroit—Five Dollar a Day Jobs waiting for skilled mechanics.**

**¶ We teach you the business in 100 hours — a new and practical system.**

**¶ Endorsed by all of the leading automobile factories.**

*Terms to deserving applicants      Get particulars*

**Machinists Training School**  
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## The "Six-in-One" Dry Storage Battery

# VENUS

Equals Six Dry Cells on Every Charge

**Non-Leakable**

**Non-Spillable**

### Lighting

Automobiles  
Miners' Lamps  
Motor Boats  
Flashlights  
Christmas Trees  
Country Homes  
Fishing, Camping,  
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### Power

Automobile  
Starters  
Motor Boats  
Electric Trucks  
Street Car and  
Railway Systems  
Telephone  
Systems  
Meter Testing  
Ignition Systems  
of all kinds  
Electric Toys  
Dental  
Instruments  
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Machines



\$2.50

### Dealers and Garagemen

A few reasons why the Venus Dry Storage Battery should be handled by you.

It gives 40 per cent more efficiency than the common wet battery.

The Venus Battery answers every purpose, be it for lighting an ordinary bicycle lamp or propelling a five-ton truck.

Each Venus Battery can be recharged hundreds of times.

Write for Dealers' Proposition.

We still have some territory open. You may be the lucky man.

**Venus Electric Lamp Company**  
64 Second Ave.      DETROIT, MICH.

## Are You Ready?

We are telling millions of motorists about TIREOID, the puncture sealer, through newspapers and magazines.

YOU are going to have callers for TIREOID. Are you ready to supply this demand?

# TIREOID

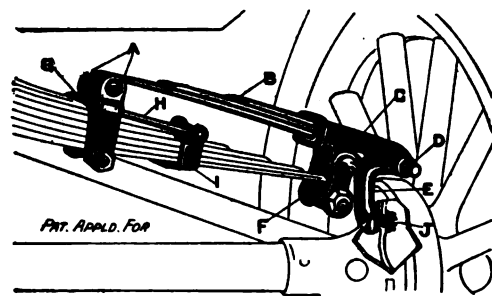
## IT SEALS PUNCTURES

is sold under a positive 6 months' guarantee. Neither you nor your customer runs any risk. We take it all. Write today for

### SPECIAL DEALER'S PROPOSITION,

and get your share of the TIREOID profits.

**THE TIREOID COMPANY**  
1200 Michigan Avenue, CHICAGO



## The Type of Spring Suspension That Is Best Adapted to Big Cars Is Best Adapted to Your Ford

There's nothing fundamentally different about the principle of the Ford and more expensive cars. The difference lies in details—mostly in details of equipment—and in size.

## DUPLEX Cantilever Spring Suspension

—especially devised and built for Ford cars, has the same general effect on the riding qualities of Ford cars that heavier cantilever spring suspension has on heavy cars. It takes out the sharp, jerking back-kick, and leaves a soft, easy-riding car.

Acts as a shock absorber in a new way. Adds 5 inches to the span of Ford car springs. Gives an underslung balance that for comfort can't be beaten.

Write for complete details. Ask your dealer for DUPLEX Equipment today.

*A Riot of Sales Are Making Interesting Profits for Dealers*

**WRITE OR WIRE NOW**  
**THE DUPLEX CANTILEVER SPRING CO.**  
184 N. Dearborn Street, Chicago

## Something New

BRANDT'S LIQUID SOAP. All soap for automobile work. Call us up.

4 CENTS PER POUND IN BARRELS.

Phone Main 576

**H. E. BRANDT**

150 West Austin Ave. CHICAGO

## 5000 CHIBECO FAN BELTS

leave our factory every day. Are you getting your share of the 5,000? Are you selling CHIBECO Leather Fan Belts or just Fan Belts?

Furnish your customer with belting that gives lasting satisfaction, made by a firm who has manufactured leather belting for over a quarter of a century.

Write today and we will gladly furnish you with name of our nearest jobber.

**Chicago Belting Co.** 100 North Green Street CHICAGO, ILL.

## More Money For You

As an Agent of the VICTOR Standard Typewriter you can easily earn additional money in spare time without interfering in any way with your present work. Hundreds of successful VICTOR Agents have done it already and hundreds of others will do it during the next few months.

Dealers everywhere who have come to appreciate the sell-on-trial qualities of the VICTOR have found an additional source of profit in this splendid writing machine.

The VICTOR is not on speaking terms with the repair man—a fact that has made it popular with sound business men who frown on heavy repair bills.

The VICTOR will not ruffle the temper of the touchiest of stenographers because it responds quietly and efficiently to their commands; requires no attention but an occasional drop of oil and the application of a type brush and a dust cloth now and then.

These features—and many others—make the VICTOR the "best seller" in the typewriter world.

*Let us prove this to you.*

**We have a splendid proposition to make to dealers and others in Foreign Countries**

**Victor Typewriter Sales Company, Inc.**

General Offices—Scranton, Pa.  
Chicago Office—203 S. Dearborn St.

# LOZIER

*Name Guarantees Service*

**Reliable Dealers Wanted in Illinois, Indiana and Michigan**

*Inquire*

# LOZIER

**Motor Co. of Illinois**

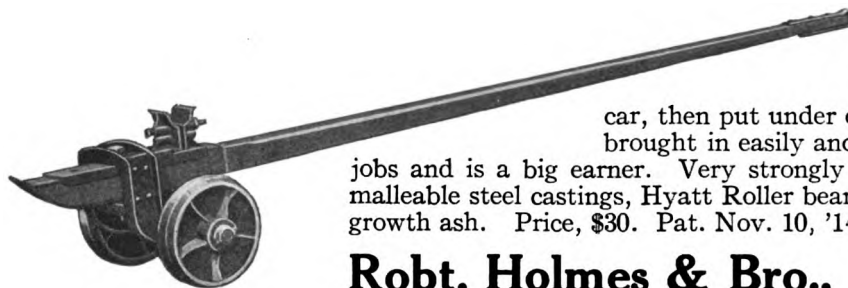
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**All LOZIER Parts Carried in Stock**

**For Other Territories Write to Salesmanager, Lozier Motor Co., Detroit, Mich.**

Patronize our advertisers and build up your Association and Journal

## Hundreds of Garagemen Use the Holmes Wrecking Truck



It is just what they need for bringing in wrecked cars. The truck is used as lever to raise the car, then put under either axle and any size car can be brought in easily and quickly. Brings lots of profitable jobs and is a big earner. Very strongly made, having frame and wheels of malleable steel castings, Hyatt Roller bearings for wheels, and tongue of second growth ash. Price, \$30. Pat. Nov. 10, '14. Discounts to dealers and garages.

**Robt. Holmes & Bro., - Danville, Ill.**

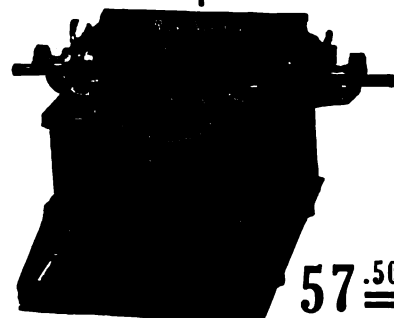
## REMARKABLE TYPEWRITER OFFER!

Buy this new, perfect, faultless typewriter—at the cost of an old-fashioned second-hand rebuilt machine. The Rex is the sensation of the typewriter industry. We guarantee it for ten years and claim for it every essential feature of any \$100 typewriter. Full standard size; visible writing; lightest touch; unlimited speed; extra wide platen; two color ribbon; back spacer;

**The Rex** line lock; tabulator; removable platen; perfect paper feed, etc. A masterpiece of engineering skill—the final perfect typewriter. To prove its merit we are willing to send the Rex on 6 days' free trial. Don't send us a penny—use the Rex for 6 days—put it to every test you would any other \$100 machine—if you decide to keep it send us the full price or pay in small monthly payments—as low as you like.

**\$100 Machine \$57.50**  
(Monthly Payments)  
**Free Trial**

**Dealers Wanted** Our dealers' proposition is the one big opportunity in the typewriting field today. Be first to answer and get the exclusive selling rights. Write—NOW.  
**Rex Typewriter Company, Dept. 165, Steger Bldg., Chicago**



**57.50**

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### Save Money—Save It in Big Chunks

**Messrs. Garageman, Shopman and Dealer:** Please fill in the necessary information in response to the following queries; it will enable us to show you immediately where a considerable saving can be made in the cost of your fire insurance. Give us complete information and description.

**American Association of Garage Owners, 53 W. Jackson Blvd., Chicago**

The data you ask for is as follows:

Name.....  
Address..... City..... State.....  
Do you own Building?..... If not, who does?.....  
Address.....  
Amount of Insurance Carried..... Rate..... Premium..... Date Expire.....  
No. Buildings..... When Built..... Construction.....  
Contents.....  
Companies insured in.....  
Dimensions of Buildings..... Length of Lease.....  
**VALUES:** Building, \$..... Stock Carried, \$.....  
Cars Owned, \$..... Tools and Equipment, \$.....  
No. of fires during last three years, if any.....

Attach a memo of Casualty Insurance you carry, kind, cost, etc. The A. A. G. O. will save you money in this form of protection also.

Signature.....

(This information is to be held as strictly confidential.)

By.....

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**"You'll growl till you get LYON'S"**

Over 400 Different Numbers Carried in Stock  
Bigger Profit

Immediate Service

Bronzed Bushed  
Accurate Fit

Long Life  
Oil Tempered

# LYON SELF-LUBRICATING SPRINGS

(Stanley Patent)

**NO RUST—NO SQUEAK—GUARANTEED**

MADE TO MATCH THE STANDARD SPRINGS

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**Axle shafts for  
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**AUTOMOBILE DEALERS and GARAGE OWNERS**

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Best by test for 24 years  
Sold by jobbers only in 1, 5 and  
10 lb. sealed boxes

**MAKES STRONG, PERFECT JOINTS**

Flows with Spelter—No Wriggling  
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Brazes at Low Heat  
Prevents Brittleness

**Write to your nearest jobber**

Manufactured only by  
**KREMBS & COMPANY**

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## IF THE MOTOR LACKS POWER SPECIFY

### REGRINDING THE CYLINDERS AND FITTING NEW PISTONS AND RINGS

It will save your customer gasoline and oil, give you  
a nice neat profit and a satisfied customer. Our  
piston pins are hardened in our own furnace. Get  
our prices, our work will meet every requirement.

**BUTLER MFG. CO., Est. 1897 INDIANAPOLIS, IND.**



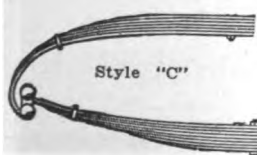
## TYPEWRITERS

Underwoods, Oliverts, L.C. Smith, Remingtons, Smith Premiers and other Makes  
\$30.00 \$25.00 \$27.00 \$15.50 \$16.50 \$15.00 and up

Expert repairing and rebuilding. Every machine in perfect  
condition and guaranteed 5 years. Write for our liberal free  
trial offer and cut rates prices.

**ALL-MAKES TYPEWRITER CO.**  
162 North Dearborn Street - CHICAGO, ILL.  
PHONES CENTRAL 6035

**Quality Springs Guaranteed**



**MANUFACTURERS OF SPRINGS**  
FOR ALL CARS ALL MODELS  
Write for replacement list and prices  
Our Service to Garagemen and Repairmen is, Al

**AUTO SPRING  
REPAIR CO.**  
1333 Jackson Blvd.  
CHICAGO

## We Save You MONEY on Office Furniture

OFFICE FURNITURE, desks, chairs, tables, railings, par-  
titions, cashier cages, bookcases, bookkeepers' desks, filing  
systems, steel furniture, safes, vaults.

OFFICE DEVICES, typewriters, adding machines, multi-  
graphs, mimeographs, dictaphones, time clocks, check writ-  
ers, addressographs, folding machines, stamp affixers, dating  
stamps, duplicators, fans.

**Chicago Safe and Merchandise Co.**  
73-75 West Lake Street, CHICAGO, ILL.

Patronize our advertisers and build up your Association and Journal



# Garage Owners—Collect Your Old Accounts

## A SPECIAL COLLECTION SERVICE for A. A. G. O. DUES-PAID MEMBERS

We will send out for DUES-PAID MEMBERS ONLY a series of three letters, the cost of which is 15c for each account sent in for collection. No commission or other charges. All accounts sent in must be accompanied by the fee of 15c for each account to cover postage, stationery and extra office expense. Letters are sent out twenty days apart and you are requested to notify this office when accounts are paid or settlement made. As all payments are made to you directly, you receive every penny that is collected. More than Two Hundred Thousand Dollars have been collected by this plan, of which the Secretary-Treasurer of the A. A. G. O. is a co-author, every cent of which went to the members of the Association using it, of which the A. A. G. O. official was then a department executive.

**Notify the A. A. G. O. promptly whenever any account is paid or settlement made**

### COURT ACTION NEXT—A SUPPLEMENTAL PLAN

The A. A. G. O. plan now is to follow up those who have not paid by more drastic action, entering suits and proving up the claims in the courts. In the series of letters used by this department the idea of a suit is held out, in the first letter mildly, in the second more pointedly and in the third the flat statement is made that the debtor must pay or be compelled to defend a suit at law.

The new movement means that the last letter will mean exactly what it says in an active, administrative way. It will mean a fight to the finish along the same lines and with the same precedents behind it that govern the action and policy of all well-regulated, honorable mercantile agencies. The contract entered into between the American Association and its general attorney, Charles C. Bombaugh, is as follows:

### THE CONTRACT

Memorandum of Agreement made and entered into this 21st day of February, A. D. 1916, by and between the American Association of Garage Owners, a corporation, duly organized and existing under the laws of the State of Illinois, party of the first part, and Charles C. Bombaugh, an attorney, party of the second part:

Whereas, the American Association of Garage Owners is an organization composed of Garage Owners, Auto Shop Repairers and Auto Dealers throughout the United States, and in the agreement with its members it has a collection department and certain rules governing the return of claims sent to it by its members after a third notice to the debtors, and the said Association desiring to further pursue the collection of these accounts, the American Association of Garage Owners, through its executive officers, have signified their desire to enter into a contract with Charles C. Bombaugh, an attorney, at Chicago, Illinois, for this purpose, and the said Charles C. Bombaugh having signified his willingness to take these collections;

Therefore, for and in consideration of the benefits to accrue to each, it is agreed by and between the parties hereto that the said American Association of Garage Owners will turn over to said Charles C. Bombaugh, when so directed by any of its members, all accounts which are sent to it for collection after the sending out of three letters, which said Association must do under the contract with its members, and the said Charles C. Bombaugh hereby agrees to take for collection the said accounts upon the following commission basis:

<p>\$3.00 on the first \$30.00 or less. Ten per cent on \$30.00 to \$200.00. Five per cent on \$200.00 or upwards. On claims of less than \$6.00 the fee shall not exceed one-half the claim. If suit is filed and collection made no fee is to be less than \$5.00.</p>	<p>No commission to be paid unless collection is made, but the members to advance cost of filing suit. No suit to be filed unless it appears that a judgment against the debtor can be collected. This agreement to remain in full force and effect for two years from and after the date hereafter.</p>
--	--

In Witness Whereof, said party has caused its corporate seal to be hereunto signed by its secretary, thereunto duly authorized and its corporate seal to be hereunto affixed and said second party has hereunto affixed his hand and seal and said parties hereunto have executed this agreement in duplicate, in Chicago, Illinois, this 21st day of February, A. D. 1916.

<p>[Seal] [Signed] CHARLES C. BOMBAUGH</p>	<p>[Signed] AMERICAN ASSOCIATION OF GARAGE OWNERS, [Seal] By C. M. CARR, its Secretary.</p>
--	---

Mr. Charles C. Bombaugh is a young lawyer of high standing at the Chicago bar and has an office at 140 North Dearborn street. His office is connected with and uses the Bonded Attorneys List issued by the United States Fidelity and Casualty Company of Baltimore, Md., which list comprises more than 10,000 attorneys throughout the United States, Canada, Mexico and all foreign countries. It is through this organization that collections can be forced at a comparatively small expense.

**Make up your list carefully and be sure to spell names correctly, give accurate addresses and correct amounts. Enclose 15c with each account. Further information concerning this work will be cheerfully given.**

**A. A. G. O. Collection Dept., Headquarters, 53 W. Jackson Blvd.  
CHICAGO, ILLINOIS**



**Come to Detroit**  
The Automobile Center and

# LEARN THE AUTOMOBILE BUSINESS - EARN \$75. TO \$300. A MONTH

With the New Building and Thousands of Dollars Worth of New Equipment, Our's is the Largest, Exclusive Auto School in the Country



Detroit trained men get preference and get jobs quickly. Think what it means to learn in the Michigan State Auto School. Factories endorse our School, glad to employ our graduates or offer them territory. Men are needed everywhere as testers, repair men, chauffeurs, garage men and service men. Hundreds of our graduates start in business for themselves.

## Get Better Job—or—Go In Business

We teach you to handle any auto proposition. Students actually build cars from start to finish, getting factory training in assembling, block-testing, road testing, everything. Special complete course in Oxy-Acetylene brazing, welding and cutting, separate from regular course. All leading types of starting, lighting and ignition systems in operation. Six-cylinder Lozier, eight-cylinder King used for road instruction. We have a new Chalmers "6-30" chassis with 3,400 r. p. m. motor, also a Detroit 6 and an Overland. Just added Delco System, used in Buick, Hudson and Packard Twin-6. Have a 1917 Willys-Knight complete chassis.

### Detroit Is the Place to Learn—Start Any Time

There are 44 auto factories in Detroit and 140 accessory and parts factories. We operate Westinghouse, Autolite, Bijur Service Stations. This has added thousands of dollars' worth of equipment and makes our electrical department unequalled. Students get actual experience in handling all kinds of electrical auto equipment. We have just installed a Sprague Electric Dynamometer for block-testing purposes for students' use. The Michigan State Auto School Graduates than we can supply.

**Follow the Crowd to the Michigan State Auto School.**

#### MONEY BACK GUARANTEE

We guarantee to qualify you in a short time for a position as chauffeur, repair man, salesman, tester, demonstrator, garage man or automobile dealer, paying from \$75 to \$300 monthly or refund your money. We have constantly more requests for Michigan State Auto School Graduates than we can supply.



**Auto Factory Co-operation—Additional Building and Equipment**

We have arrangements with the Auto factories to put them in touch with men who intend going into business for themselves. The factories are looking for trained men to represent them. Come here and start right; get the information first-hand and don't wait. 33,000 square feet of additional floor space in our new building, thousands of dollars worth of new equipment, plenty of room for students to work in our new building at 687-89-91 Woodward Ave. Our school has grown by leaps and bounds, students come from

#### DETOIT

THE HEART OF THE AUTO INDUSTRY



44 AUTOMOBILE FACTORIES, 140 ACCESSORY FACTORIES

This Is One of the 1916 Classes. **COME TO DETROIT.**

#### Dealers' Opportunity

We can supply competent high grade men to handle your garage and repair shop. Our Graduates are especially well fitted to handle electrical troubles. They get actual experience while in their final work. We are constantly supplying men to all parts of the country.

all over the world. Graduates have started in business for themselves; others have accepted good jobs both in Detroit and over the country. Their work has proven that we train them right. We are constantly adding new equipment.

#### ACT QUICKLY—NOW—DON'T WAIT

Get full particulars, "Auto School News" and New Catalog, both absolutely free, or better still, jump on the train as hundreds have done, and come to Detroit, the "Heart of the Automobile Industry," and learn right.

The Old Reliable School  
A. G. ZELLER, President

## Michigan State Auto School

30 Auto Building, 687-89-91 Woodward Ave., 11-19 Selden Ave., DETROIT, MICHIGAN, U. S. A.


# DON'T SCARE

## PEDESTRIANS

# WARN THEM

The Original

with the "Liberty Bell," the Automobile Signal of distinction. Most signals scare people instead of warning them, but when they hear the mellow tone of the "Liberty Bell," they step smilingly to one side. It does not offend—its warning is polite, not boisterous.



**'Liberty Bell' Signal**

Hundreds of automobile owners have adopted this dignified signal and there is a good profit in it for dealers.

The "Liberty Bell" is strongly made and is handsomely finished—as beautiful as it is efficient.

**Write today for our Liberal Proposition to Dealers**

Patents on both design and mechanism.  
Beware of imitations.

## THE LIBERTY BELL COMPANY

401—28 The Arcade Cleveland, Ohio

## The Cosmo Time Stamp

### Thousands in Use



**Price \$7.00**

Is proving its value in Garages all over the country. GIVES you exact DAY, HOUR and MINUTE each and every repair job is started and finished. Base your charges on exact time consumed and you can't help but make money in your repair department.

STOPS arguments with your customers. MAIL the COUPON, or write for one on 10 days trial. No obligation to purchase. Guaranteed—Accurate—Durable.

**A. D. JOSLIN MFG. CO.,**  
225 W. Erie St., Chicago, Ill.

Please send me COSMO TIME STAMP on 10 days trial. At the end of 10 days I will either return the Time Stamp or remit you the price, \$7.00.

Name.....  
Address.....

## BAD DEBTS

Collect them yourself with a

## SAYERS SYSTEM

### COLLECTION CABINET

Over 40,000 now in use. Results guaranteed.  
Pin the coupon to your letterhead and mail

### RIGHT NOW

**SAYERS CABINET MFG. CO.**  
20 E. Jackson Blvd. CHICAGO

Send descriptive matter, cut of cabinet, copy of guarantee, prices, your selling terms. **No Obligation.**

A. G.

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**TRUNKS FOR AUTOS**  
THIS MEANS THE  
**KAMLEE**  
COMPANY  
440 E. Water St. Milwaukee

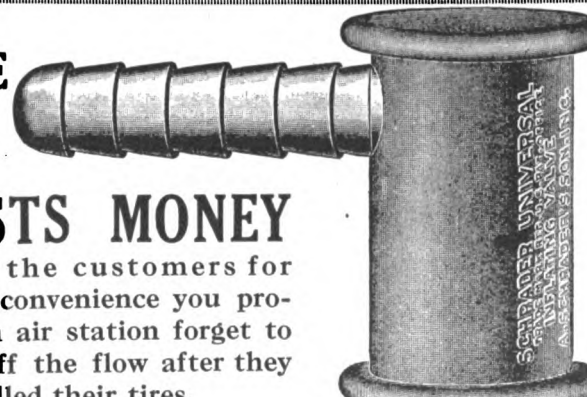
Trunks for all makes of cars and for all purposes  
Dust-Proof, Rain-Proof, Strong, Light, Convenient, Handsome  
Liberal Profits for Garagemen and Dealers. Send for our proposition

**RIVES' AUTO-PEDAL NEVERSLIP PADS**  
Make Driving more comfortable and prevent slipping.  
**Full Set \$1.00**  
PUT ON ANY CAR IN A MINUTE.  
Close dealer co-operation insures quick sales. Write for proposition.  
**Geo. H. Rives Mfg. Co., 2187 Woolworth Bldg., New York**

For **STRENGTH** and **RELIABILITY**  
**The Curko Socket Wrench**  
Turned from solid bar stock

 **HEAT TREATED : PRICE, \$1.00**  
Ask for our dealers' discounts  
**Currier-Koeth Mfg. Co.**  
Coudersport, Pa.

**GARDEN CITY SPRING WORKS**  
Manufacturers of  
**AUTOMOBILE SPRINGS**  
2300 ARCHER AVE. CHICAGO, ILL.

**FREE AIR**  **COSTS MONEY**  
when the customers for whose convenience you provide an air station forget to turn off the flow after they have filled their tires.

Guard against this waste by attaching a  
**Schrader Automatic Inflating Valve**  
to your air hose.

Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve.  
Made to fit any diameter of hose from 1-4 in. to 5-8 in.

**PRICE ONE DOLLAR**  
Manufactured by  
**A. SCHRADER'S SON, Inc.**  
783-793 Atlantic Ave., Brooklyn, N. Y.  
Schrader products were awarded a Grand Prize and two Gold Medals at the Panama-Pacific International Exposition. "There's a reason."

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A Mart where readers can Buy, Sell, Rent and Exchange Merchandise; Obtain Help and Employment, announce their willingness to Serve Professionally, etc., etc. Our readers are invited to make generous use of it at the small cost of 25 cents per line until further notice.

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In this section will introduce your article or business to over 10,000 pure trade readers, including Garages, Repair Shops, Dealers, Supply Stores, etc.

This list includes live prospects in the trade and contains no waste or unproductive circulation.

For quick results, mail your ad today. We will write your ad free; simply tell us what you have to offer.

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## AAA SCORED CYLINDERS

Repaired by Patented Electric process. Filled with a silver and nickel alloy. (Eliminates Grinding.) No warping or enlarging of cylinder bore. Same piston and rings used. Reshipped 24 hours after received. Also do welding and grinding.

### L. LAWRENCE & CO.

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**FOR SALE—NATIONAL CASH REGISTER;** a three drawer cash register; gives three totals and grand total; shows separate sales, paid outs, receipts of account and charges, issues receipt, is a modern machine; been in actual use less than one year. This is style 562-3C. Machine is in perfect order. The National Cash Register's price is \$475, and has recently advanced. I will take \$300 cash. Address R. C. S., American Garage & Auto Dealer.

**"HURRY-UP" RADIATOR REPAIR SERVICE.** Sheet metal work that pleases. Fenders, hoods, gasoline tanks, etc., repaired and built to order. **CRAFTSMEN METAL CORPORATION,** 2815-17-19 Wabash Ave., Calumet 30, Chicago.

**SALESMAN WANTED, ONE WITH** car preferred, to demonstrate and sell automobile accessories. **SALES MANAGER,** 650 Woodward Ave., Detroit, Mich.

## Automobile Cylinders Rebored

**STERLING ENGINE CO.**

331 S. Clinton St. Chicago

### PROTECT YOUR IDEAS

Many of the best selling accessories and supplies were invented by garage and repair men. Protect the ideas you develop.

A patent, a trade-mark or a copyright may mean the difference between affluence and poverty in later years.

**CHARLES TURNER BROWN,**  
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### WANTED—OLD CARS.

Will pay highest prices and spot cash for old cars in any condition. Jackson Auto Salvage House, 560 Jackson Blvd., Chicago.

## Don't Buy a New Speedometer Shaft

We Repair Them as Good as New

Guaranteed not to pull apart or break. No solder used. Seamless Steel Ferule. Patent applied for.

Parts and repairs for most any Speedometer, Shafts, Swivel Joints, Wheel Gears, Clamps and Pinions.

### Speedometer Repair Co.

1303 W. Jackson Boulevard

CHICAGO, ILL.

## AUTO CAPE TOP CO.

Seat Covers. One-Man Top.

Victoria Tops. Painting.

Woodwork. : : : : :

Liberal Commission  
to Garage Owners

Calumet 5660

2335-6-8 Michigan Ave.,  
Chicago, Ill.

### ENGINES—A LARGE STOCK

SAVING OF 50% TO 75%

50 H. P. Marine Engine, \$100; 30 H. P. Cadillac Engine, \$75; 35 H. P. Continental, \$75; 35 H. P. Wisconsin Engine, \$100; 3 Cyl. Chass 30 H. P. A. C. Bosch Magneto, \$65.

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Timkin Axles, Transmissions, Low and High Tension Magnets, and many other parts, at great savings, while they last. Order now before they are gone. Give description of parts wanted.

### ROBERTSON,

1255 North Clark St., Chicago, Ill.

### "DON'T SCRAP ALUMINUM PARTS.

Save them with SO-LUMINUM, new, great welding compound; ½ time and cost of acetylene. No flux—use gasoline torch. **TRIAL BAR WITH FULL DIRECTIONS** 50c. **SO-LUMINUM MFG. CO.,** 1790 BROADWAY, N. Y., Booklet 8. So-Luminum Repair Shops, 126 Nassau St., Brooklyn, N. Y."

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Magnets, Coils, Lighting, Generators, Starting Motors, Magnetizers. We manufacture, sell and repair. Prices right and service the best.

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Everready Automatic Engine Starter. General machine work for foreign and American cars. Welding of all metals. Manufacturer Catelain Hose Coupling. 1446-8 Indiana Ave. Chicago, Ill.

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at lowest prices in the  
United States

BEST SERVICE

Plain or "V" shape for any car.  
Write for special quotations.

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ALL WORK GUARANTEED  
FOR ONE YEAR

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Phone Monroe 1135



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Manufactured by

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We teach you construction, repairing and driving in 6 to 8 weeks. Special instruction in Acetylene Welding, Knight Engines, Vulcanizing, Electric Starters, Automobile Salesmanship. Greer graduates always in demand. Earn \$150 per month and up.

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A Success for the Dealer—  
A Success with the Car Owner—

There's a *real* demand for a *real* carbon remover and car owners are quick to realize the value



We need more live dealers to help us distribute. We do not ask our dealers to buy our goods until they have felt the demand, so we have a special co-operative selling proposition to submit to you.

The HART-BELL CARBON REMOVER is a device for introducing live steam into the cylinders of the motor. Live steam is the best agency for loosening carbon. The carbon is blown out through the exhaust while the motor is running. The HART-BELL CARBON REMOVER is quickly and permanently attached and can be used as often as desired. Sells for \$5.00 and there is good profit for you.

Write at once for the selling plan.

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823 Times Bldg. New York City  
or  
MOTOR EQUIPMENT CO.  
1436-38 S. Michigan Ave. Chicago, Ill.



Price \$5.00

The HART-BELL is absolutely guaranteed to you and to car owners

Can be  
put on  
any car



"Ask the man who's used it."

## CLEANS AND POLISHES AUTOMOBILES

The only known polisher and cleaner that will remove Road Oil and Tar.

No hard rubbing—apply, leave it set a while, wipe off.

Preserves, cleans and polishes the varnish.

Dealers will find a ready sale for POLAC.

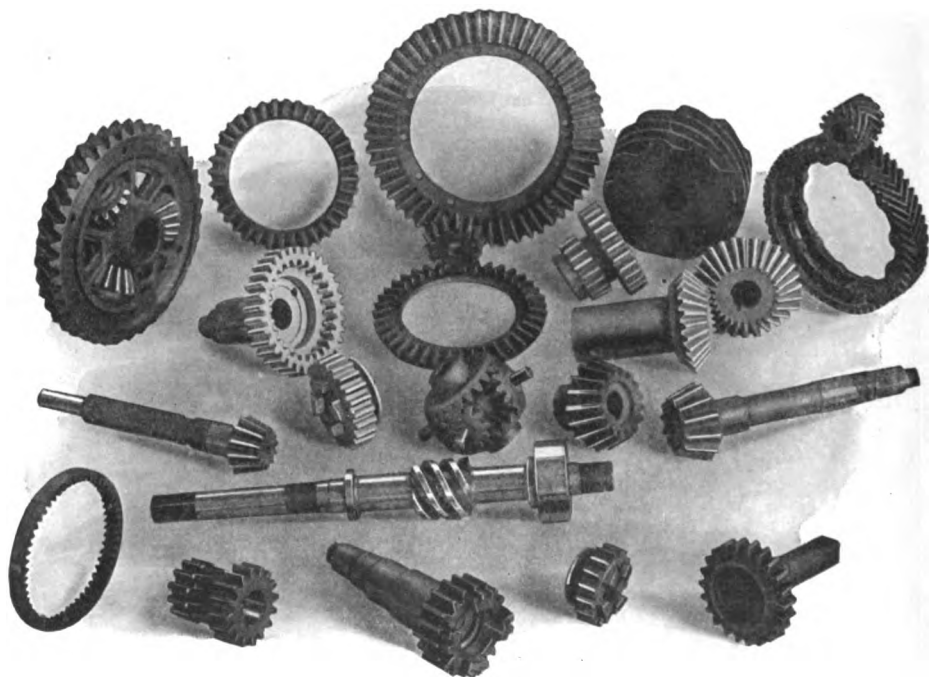
Order a sample can and be convinced.

**Motor Equipment Company**  
1438 Michigan Avenue  
Chicago, Ills.

# WILLIAM GANSCHOW COMPANY

## GEARS for Automobiles Our Specialty

**Y**OU DO NOT HAVE TO LAY UP YOUR CAR and send to the manufacturers for repair parts or replace gears, as we are prepared to furnish promptly transmission, differential or timing gears, and any other part made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or Foreign manufacture. Workmanship and quality guaranteed.



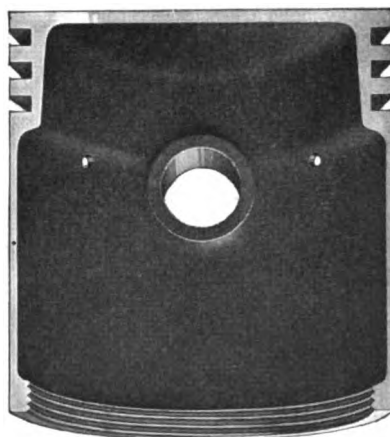
WASHINGTON BLVD. AND MORGAN STREET - CHICAGO, ILLINOIS

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Cast  
from  
Metal  
Patterns  
at Small  
Cost.

Note  
the  
Thin  
Wall



This  
Buick  
Piston  
Weighs  
Only  
1 lb.  
11 oz.

## Semi-Steel Pistons Wear 10 Times Longer than **Aluminum Alloy** **Weigh the Same**

When it is possible to obtain pistons which will give you ten times as much wear as you are now getting, we feel justified in asking "why use aluminum alloy, when we make semi-steel pistons of same weight that will wear 10 times as long?"

### SAVE THESE PRICES FOR FUTURE REFERENCE

SIZE OF CYLINDER NOT TO EXCEED	Reboring, Making New Pistons and Rings SEMI-STEEL PISTONS				SEMI-STEEL PISTONS ONLY No Rings or Bushings			
	ONE CYL.	TWO CYL.	FOUR CYL.	SIX CYL.	ONE CYL.	TWO CYL.	FOUR CYL.	SIX CYL.
2½	\$5.62	\$10.25	\$18.50	\$26.00	\$4.00	\$ 7.50	\$12.00	\$17.50
2¾	6.00	11.00	20.00	28.20	4.25	8.00	13.00	19.00
3	6.37	11.75	21.50	30.40	4.50	8.50	14.00	20.50
3¼	6.75	12.50	23.00	32.60	4.75	9.00	15.00	22.00
3½	7.12	13.25	24.50	34.80	5.00	9.50	16.00	23.50
3¾	7.50	14.00	26.00	37.00	5.25	10.00	17.00	25.00
4	7.87	14.75	27.50	39.20	5.50	10.50	18.00	26.60
4¼	8.25	15.50	29.00	41.00	5.75	11.00	19.00	28.00
4½	8.62	16.25	30.50	43.60	6.00	11.50	20.00	29.50
4¾	9.00	17.00	32.00	45.80	6.25	12.00	21.00	31.00
5	9.37	17.75	33.50	48.00	6.50	12.50	22.00	32.50

**Buicks—Model 10—Rebored, New Pistons and Rings \$20.00. Immediate Shipment.**  
**We have metal patterns for over 1000 different pistons.**

We absolutely guarantee our work to be FREE from any defect of material or workmanship. Shipment made in 2 to 3 days. Become one of our many satisfied customers.

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**MISHWAKA, INDIANA**

Only  
\$ **3.85**



## Here Is the Hand Auto Horn You've Been Waiting For

*You can pay more than is asked for a Garford Hand Auto Horn, but you cannot buy more dependable warning signal service no matter what you pay.*

The Garford Hand Auto Horn is standard equipment on a number of the most popular makes of cars on the market—it should have been part of your equipment. The very name Garford means quality and service—the one warning signal that will inspire absolute confidence. Tone distinctly different from all others and raises above the ordinary traffic sounds, and carries long distance ahead in plenty of time to clear the road.

The plunger placed at an angle of 45 degrees, responds with absolute certainty to the slightest touch so that you can modulate the volume of tone to the urgency of your need.

No gears or ratchets to collect dirt and clog. No batteries, push buttons, wires, etc., to bother with. Handsomely finished in baked black enamel—but that's not all—it's always on the job. Priced within the reach of all—so why pay more—when

## The Garford Hand Warning Signal Is Guaranteed For the Life of Your Car

### The Garford Rexo II Hammer Driven Auto Horn

The loudest signal of its kind on the market. Compact in design—highest electrical efficiency—striker ground absolutely true to diaphragm after assembling. Push button constructed so that slightest pressure at any point assures perfect contact. Attached to steering wheel. Storage battery or dry cells runs entire season without attention. Simple and easy to operate. Handsomely finished with two coats of baked black enamel, with highly polished nickel bell. At its price, sold under our unlimited guarantee, it is undoubtedly the best Auto Horn buy of the season. Price, only..... **\$3.85**

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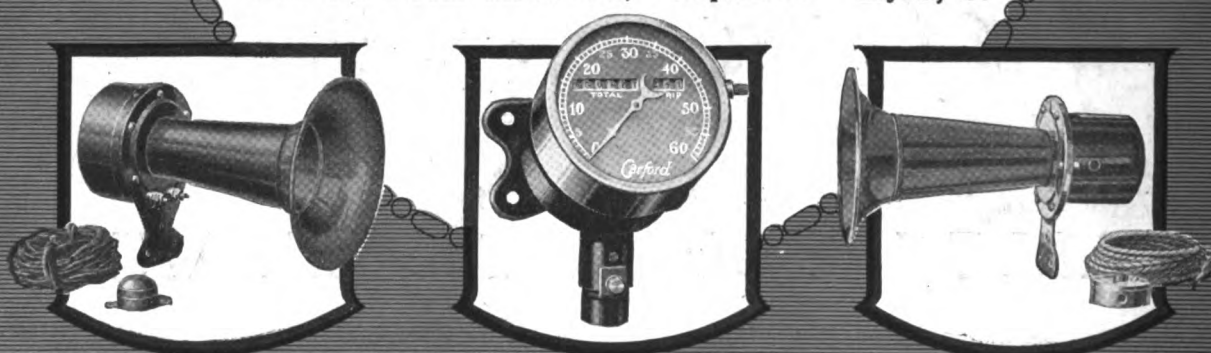
Also manufacturers of Garford Flush and Bracket Types Speedometer;  
Garford Dynamo Lighting System; Maxo II Electric Horn for Motor Cycles.

## Garford Auto Accessories Best Buy of the Season

*See them at dealers' or write for booklet*

**To Dealers:** Now is the time to get in line for your share of the auto accessory prosperity these thoroughbreds will produce for you.

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Automobiles Trade Journal

INDEXED

# AMERICAN GARAGE AND AUTO DEALER

TORA

OFFICIAL PUBLICATION OF THE A.A.G.O. X

Volume 7  
Number 6

CHICAGO

NOVEMBER, 1916

\$1.00 Per  
Year



# Russel

## Internal Gear Drive Axles

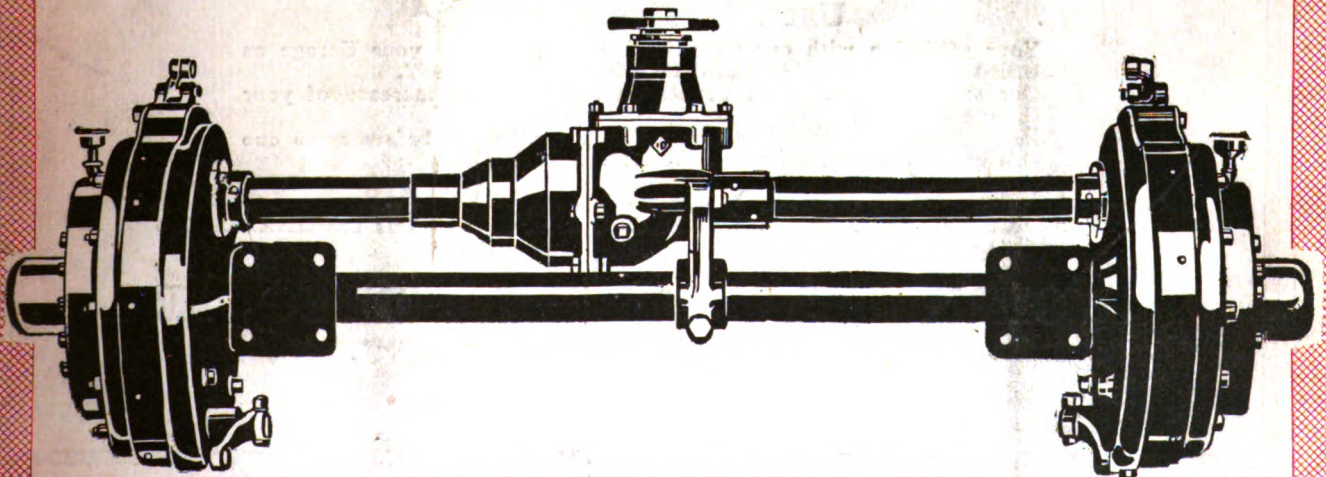
Are noiseless. They are clean. They are efficient at all speeds and they will outlast the other working parts of a truck.

Change your chain drive truck into an up-to-date shaft drive truck by using the RUSSEL Internal Gear Drive Axle. The jack-shaft or power transmitting axle is yoked to the dead axle which alone carries the load of the truck.

Internal Gears will outwear chains and sprockets which are very objectionably noisy.

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**Russel Motor Axle Company - North Detroit, Michigan**





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We are selecting a limited number of enterprising Garage Owners to become Members of our **CLEARING HOUSE FOR USED AND REBUILT AUTOMOBILES**. There is a quick profit in the sale of Used and Rebuilt Automobiles under our plan.

## Chicago—The Great Used Car Market

The immense stock of Used and Rebuilt Automobiles constantly accumulating in Chicago is the result of the intense competition among Automobile Dealers. Chicago Automobile Purchasers demand the Latest Model Car and the Dealer bids for the Purchaser's business by taking his last year's Model in trade. **AUTOMOBILE CLEARING HOUSE, INC.**, acts in the capacity of a Clearing House for this immense supply of Used Automobiles and distributes them by means of its associated dealers through this territory. Our Wide Market Facilities and our Direct Contact with the large dealers enable us to buy the best cars at the minimum prices.

## No Investment in Cars

Because of the vast surplus of Used Cars in this market, we are able to quote prices to our Members that are much lower on an average than the prices in their city—and, what is just as important as price—we can deliver the exact model required in better condition than the same car for sale in their cities. Under our method of sale, our Members are not required to make any investment in cars.

**There is a quick profit in the sale of USED and REBUILT Automobiles under our plan**

The Member makes no yearly contract whereby he is bound to buy a specified number of cars, as is the usual custom in the Automobile Business. Our Clearing House methods enable our Members to fill the requirements of their customers exactly and promptly without any investment on their part.

## Membership Restricted to Dealers Outside of Chicago

**THE AUTOMOBILE CLEARING HOUSE, INC.**, has no Members or dealers in the city of Chicago. **It gives service exclusively to its out-of-town Members.**

It affords its Members the opportunity to secure competitive prices on all the automobiles on the Chicago market.

It renders service to each Member of the Clearing House which he could not get as an individual dealer.

We buy better cars than you can buy in your city. Every car we buy must meet the high standard of quality and efficiency required by our Mechanical Department.

Our service is rendered solely for the benefit of the Members of the Clearing House.

It is exclusive service on a confidential basis. The prices we quote Members are confidential prices and the Member makes his own price to his customer. We have unlimited purchasing power, and therefore can buy on the lowest cash basis.

We do not take automobiles on consignment from any Chicago dealer, but buy the precise model desired in the open market at the lowest price.

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Your affiliation with our Organization will establish your Garage as **USED CAR HEADQUARTERS IN YOUR COMMUNITY**.

Our service means Quick Profits on Sales and an increase of your Garage Business.

**RIGHT NOW**—is the time to send your application before some one else secures **YOUR** territory. Write for Particulars.

**WOULD YOU LIKE TO BE OUR LOCAL MEMBER?**

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**622 RAILWAY EXCHANGE BLDG.**

**CHICAGO, ILL.**



## Protect Your Car Investment

LET'S assume that your car cost \$1,000—6% interest on that investment is \$60 annually. The annual interest on your investment is about seven times the cost of a year's supply of

# Polarine

FRICION REDUCING MOTOR OIL

The lubricant which minimizes friction, prevents scored cylinders and burned out bearings.

By using Polarine, you will save in repairs alone, a great portion of the interest not to mention the increased re-sale value and the pleasure of a smooth-running motor.

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Polarine is produced scientifically by acknowledged authorities, who have made a life study of lubrication. They are unable to improve it. The Standard Oil Company recommends its use for any make or style of car.

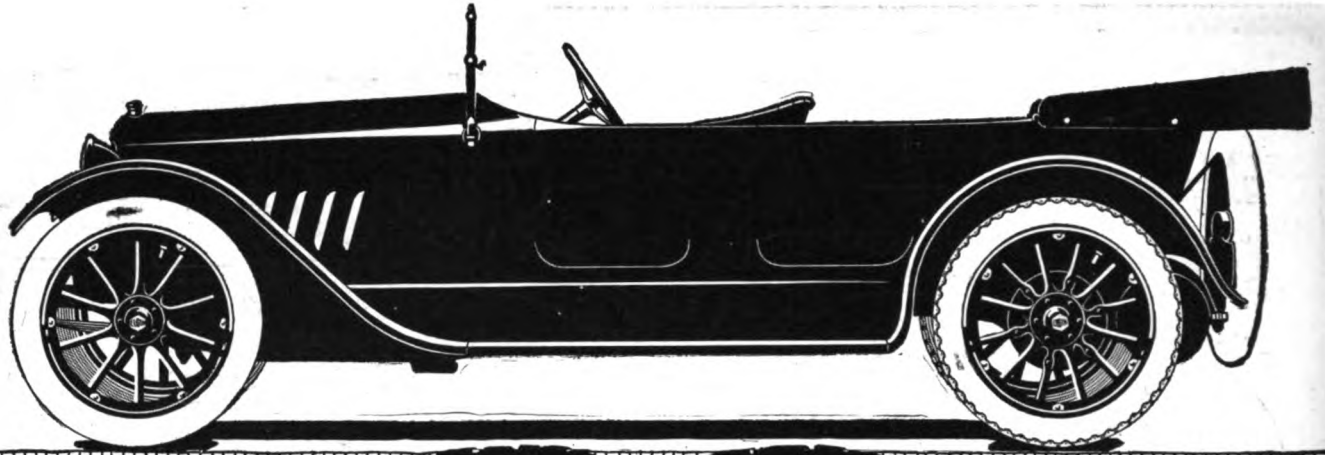
Order a half barrel today, and protect your car investment.

Standard Oil Company (Indiana) Chicago, U. S. A.

Use Red Crown Gasoline and get more power, more speed, more miles per gallon

17a





## Elgin Character

The Elgin Six is a car of refinement and distinction. It is characterized by the dependability and easy-riding qualities found only in cars of much higher price.

Big, beautiful, powerful, yet strictly a "Light Six," with mechanical construction of the highest standard, from the powerful six-cylinder valve-in-head motor to the smallest detail.

In size, appearance and mechanical qualities the Elgin Six leads the field in its price class, embodying style and values found only in other cars selling from \$200 to \$400 higher.

There are so many big special selling features in the Elgin Six that Elgin Dealers keep the wires hot calling for "More Elgins." Some desirable territory open for dependable dealers. Write or wire.

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Six-Cylinder Valve-in-head 35 horsepower Motor.

Unit Power Plant, Three-Point Suspension. V-Type Radiator, Thermo-Syphon Cooling. Combination Force Feed and Splash Lubrication.

Two-Unit Dyneto Electric Starting and Lighting System.

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One Man Top—Jiffy Curtains.

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Chicago, U. S. A.

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**O**UR new preparation—Johnson's Carbon Remover—is ready for the market.

We have made exhaustive tests under all conditions and pronounce it "Perfect"—which it must be before it can go out under the name of "Johnson".

If you will sign and mail us the coupon—we will send you a **pint free by prepaid express**—this is enough for thoroughly cleaning the carbon from a six cylinder car.

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We guarantee the article and sale of Johnson's Carbon Remover without equivocation. It is absolutely fool-proof—no matter how much you use and how you use it—Johnson's Carbon Remover cannot injure any part of the motor. You could soak an engine in it for days without the slightest injury.

**NO EQUIPMENT EXPENSE**

You don't have to buy anything except Johnson's Carbon Remover to remove carbon—not even an oil pump is necessary—so why pay from \$5.00 to \$25.00 for carbon removing equipment.

No matter how choked up a motor may be—Johnson's Carbon Remover penetrates, and softens the carbon so that it blows out as the car is operated. It isn't necessary to lay up your customers' cars for removing the carbon—simply pour in Johnson's Carbon Remover and blow it out at your convenience—any time after 2 hours—you may leave it in all night if more convenient.

**WILL BE NATIONALLY ADVERTISED**

Johnson's Carbon Remover will be very extensively advertised in the leading motor papers, magazines and weeklies. There is bound to be a large demand for it. We want you to know about this wonderful new product so you can recommend it to your customers—either doing it for them or selling them the material to use themselves—either way there is money in it for you.



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Please send me a pint of Johnson's Carbon Remover free by prepaid express. I agree to try it and report results just as I find them. If your Carbon Remover gives as good results as you claim I shall consider the matter of stocking.

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# AMERICAN GARAGE AND AUTO DEALER

FOR THE GARAGE-OWNER, AUTO-REPAIRMAN AND AUTO-DEALER

PUBLISHED  
The AMERICAN ASSOCIATION

IN WHICH HAS  
GARAGE EFFICIENCY AND



MONTHLY BY  
GARAGE OWNERS

BEEN INCORPORATED  
RETAIL MOTOR TRADE JOURNAL

Vol. VII. No. 6

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November, 1916

C. M. CARR, Editor and Manager  
IRWIN D. GROAK, Technical Editor

J. R. HASTIE, Advertising Manager  
CHAS. C. BOMBAUGH, Law Editor

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Subscription Per Annum (Postage Paid) \$1.00. Advertising Rates on Request.

## THE AMERICAN ASSOCIATION OF GARAGE OWNERS, INC.

A corporation not for profit, organized under the laws of Illinois.

General Headquarters, Chicago, Ill., 537 S. Dearborn Street, Telephone Har. 8160.

New York Office: 30 East Forty-second Street, F. L. Hadley, Manager.

Detroit Office: 901-902 Kresge Building. Robert M. Smith, Manager.

### Objects of the Association

Section 1. To carry into effect, in the operation of the business of our members, the idea embodied in the slogan, "Safety First," in order that membership in the association will insure to the public that quality in service in repair work and service identical with the highest safety and values.

Sec. 2. To devise ways and means of establishing standards of safety and values that will be in harmony with the cost thereof, and of lowering costs to members and patrons.

Sec. 3. To act together through the general headquarters of the association in such practical ways as to create an adequate standard of profits for members, consistent with the capital employed by them and the service rendered to patrons.

Sec. 4. To promote by every means in our power measures and legislation which will give to our members the same legal protection which is now enjoyed by the building material trades, hotelkeepers and others catering to the public in like manner.

Sec. 5. To unite individual garage owners and associations of garage owners in a central body for the improvement of business as repair men, storage and livery men, and dealers.

Sec. 6. To co-operate with other organizations having similar aims.

Sec. 7. To secure and disseminate to persons and members identified with this association all legal and other proper information which may be of value to them in the prosecution of their business as public garage owners, auto-repairmen and automobile dealers.

Sec. 8. To publish such magazines, periodicals, bulletins, etc., as may be required from time to time for the purpose of supplying vehicles for the dissemination of such information as referred to in the preceding section.

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"One for All and All for One."

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Dependable ignition—dependable lighting—dependable starting—these contribute mightily to the pleasure-giving, comfort-giving, service-giving capacity of any car. And remember this—the electrical accessories upon which these things depend are no better than their bearings—they "make good" only so long as their bearings stand up to the work.

Practically all high-grade magnetos, lighting generators and starting motors made in America—those used in the better-class cars—carry "NORMA" Ball Bearings. Which is the best of reasons for believing that any other electrical accessory will perform better if equipped with "NORMA" Bearings. Try it.

See That Your Electrical Accessories Are "NORMA" Equipped

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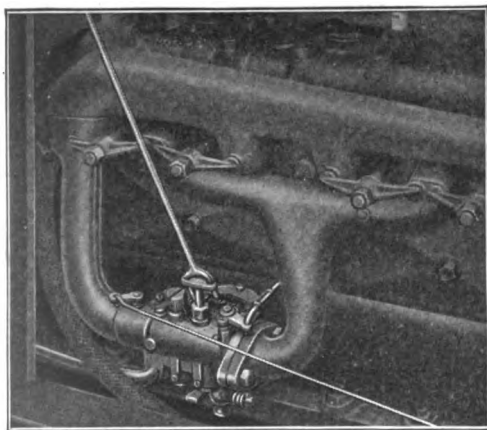
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## Model N Marvel Carburetor

Designed especially for Ford Cars.  
Fits right in place of regular installation, no changes whatsoever.



Model E Marvel Carburetors are standard on Buick, Olds, and Oakland

Model E Marvel Carburetors greatly improve Overland and Studebaker cars. Catalog on application.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retail for \$8.00 complete.

### MARVEL CARBURETOR COMPANY

FLINT, MICHIGAN, U. S. A.



# AMERICAN GARAGE AND AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE,  
GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. VII. No. 6

New York — CHICAGO — Detroit

November, 1916

## Organize! Organize! Organize!

**F**RAGMENTARY organization is helpful as far as it goes, but it doesn't go far enough. Organization efforts, unified and strengthened by experienced leadership, are invincible.

It has been publicly stated that something is the matter with the trade association movement in our field. There is. It has been more or less voiceless until this journal came into existence. *Garage Efficiency*, now incorporated into the AMERICAN GARAGE AND AUTO DEALER, did its best—it did valuable pioneer work—but its reach was too short, its power too meagre, its resources and experience in this field of endeavor too limited to accomplish all that was desired, but its work has borne excellent fruit.

The motor press has helped along the cause of organization, but too much should not be expected of it. It has many and varied interests to serve. It cannot be exclusive champions of the garageman, shopman and dealer. The ownership and animus behind these publications make them what they are, namely, excellent mediums of information for car owners primarily, and the trade interests incidentally and secondarily. We should all be grateful for the good they have done the association movement.

As in all lines of trade, so in the automobile trade, *the retailers must unite for the protection of their craft interests*; the jobbers and manufacturers are exceedingly busy looking after theirs, and rightfully so. "God helps those who help themselves" is a trite Biblical saying, inspired or apocryphal, and we have yet to learn of the other branches of the trade successfully, even if attempting such a program, correcting trade abuses from which retailers suffer.

"Get together!" should be the slogan of the garage and auto

dealer trade. Organize *locally*, by *states* and *nation*. "In union there is strength" and "In division there is weakness." The A. A. G. O. and this journal are committed *solely* and *exclusively* to efforts that will make the *retail* branch of the auto business the *real power* in the industry. When the retail trade prospers, the wholesale and manufacturing branches of the trade prosper. Prosperity works from the retailer up, not from the manufacturer down. In standing for the rights of the garageman, shopman and dealer, we stand for the integrity and success of the *entire* industry.

Get busy, brothers. Organize locals, and send reports of your work to National Headquarters. If you need help in organizing, send to Headquarters for a field man and he will come to you.

If you have a state organization the officers should get into communication with the A. A. G. O. and thereby annex its growing influence to that of the state body. We will give you and your work wide publicity and help you wage your battles more successfully. No formal "*affiliation*" of state and local associations is required. Membership in the National body is *individual* and the A. A. G. O. field

**U**nited we conquer, divided we fall. The salvation of the retail interests lies with the retailers themselves. Unify the work of garage and dealer associations through the A. A. G. O. and the AMERICAN GARAGE AND AUTO DEALER, thereby presenting an invulnerable, invincible front to the enemies of profits and our success.

force will attend to that.

Secretaries of local and state bodies are invited to call for every assistance the A. A. G. O. can render. Chairmen of state legislative committees, ditto. *There is much to do, so let's get at it.* The factionist and divider is an enemy to our cause. Ignore him; he typifies the past, embodying none of the spirit of progress of the day and the future that lies immediately before us. *Co-operate with all forces* honestly willing to help, but set your heads and hearts against *division*, remembering the battle-cry of the enemy, "Divide and conquer."

And now, let the good work continue—*nothing can stop it.*

*C. M. Carr*  
Secretary-Editor

# The Editorial Point of View

## Reducing Insurance Cost Through Co-Operation

ORGANIZATION alone will reduce insurance cost to garagemen, auto dealers and auto repairmen. We have the proof of the correctness of this statement.

An A. A. G. O. member at Harvey, Ill., was given the prohibitive rate of \$4.99 per \$100 on his building and \$5.24 on contents. He refused to be held up and has carried his own insurance. In other words, he was debarred from the protection that reasonable insurance rates would have made available to him. He spent some years in an individual endeavor to secure a reduction in rates—made changes at large cost, reduced hazard in other ways, yet the rate went up instead of down.

The Insurance Department of the A. A. G. O. then took up his case. It at once procured for him a rate of \$3.50 on building and \$3.85 on contents—the result of organization.

Besides saving him \$1.49 on his rate for building and \$1.39 on the rate for contents, the A. A. G. O. will give him a refund at the end of the year constituting the balance unused in paying losses and expenses. In the case of this member the saving will be \$1.49 on \$10,000 and \$1.39 on \$4,000, or a total saving on rate alone of \$149 + \$55.60 = \$204.60 plus the end of the year refund.

He is able to obtain this benefit solely and only because of his membership in the A. A. G. O. at a cost of \$2.00 per year. *Can you beat it!*

## Get Your Share of the Winter Business

THE garage and retail auto business has ceased to be a part-year business and is now an all-year affair. If you have not awakened to this fact, Brother, rub your eyes, scratch your head, stretch your limbs, and then get into the fray.

More and more motorists are running their cars all winter. Where five years ago half of the live storage customers of a garage would go into dead storage for the winter or sell their cars, the percentage of reduction has been lowered to about five per cent, according to advices received from a number of sources in Illinois, Iowa, Indiana, Michigan, Ohio and Pennsylvania. South of this latitude this small percentage disappears and in more northerly territory it increases. In all latitudes, however, there is a growing winter demand for closed tops, lap robes, heavy wearing apparel, heaters, etc.

Stock up for this winter trade. Feature winter

goods of every description in your advertising. Do all in your power to increase the pleasures of winter motoring and thus popularize it as a year-round pastime. This is building a larger and more prosperous auto industry.

## Unmask the Double-Dealer

BY far the largest number of complaints from garagemen and dealers which reach A. A. G. O. Headquarters charge certain manufacturers and jobbers, principally the latter, with breaches of faith. Some of this information is right to the point, some more or less general in its statements and application.

The charge always embodies the idea of double-dealing—of the manufacturer or jobber, as the case may be, selling the garageman or dealer, then going over his head or under his feet and selling the consumer, the said garageman or dealer's natural customer, at dealer's prices, instead of referring the customer to the nearest proper retail distributor.

Of course, this is a *trade abuse that has got to be stopped*, and no organization of retailers is worth anything to its members that would wink at such an unfair and destructive practice, or fail to use all of its power to bury such tactics and those who employ them.

Beginning with our next issue, concrete instances of unfairness and double-dealing of this character will be exposed in these columns. Let the past be forgotten and the record started anew. Manufacturers and jobbers who pursue a consistent, frank and honest course *from now on* will escape censure, but those who refuse to reform—well, our readers will supply the facts and this journal will publish them.

## The Steenerson Bill

THE Steenerson bill before Congress, referred to in these pages a number of times, provides for a supervision of the oil industry much after the fashion of the Inter-State Commerce Commission's supervision of the transportation industry.

Is the price of gasoline too high? The consumers and dealers who supply consumers say it is. The oil refining companies say it is not! The former make the price and there is no appeal from this decision.

Not so in the transportation industry. The shippers say the rate is too high. The transportation companies say it is not. Neither can force their views upon the other. The case goes to the

Interstate Commerce Commission, an impartial tribunal, where all of the facts are ascertained and a decision reached designed to serve the real interests of both parties to the controversy.

The principle of the Steenerson bill is therefore seen to be sound. So far as we can observe, it is sound in details also. No person possessing average intelligence has the hardihood to suggest a reversion to the old secret-rebate, all-the-traffic-will-bear, crazy-patch transportation conditions of thirty years ago, and after the Steenerson or similar bill is passed by Congress no sensible person will ever suggest a return to the arbitrary price-making conditions that now obtain in the oil industry.

Even the big companies will fare better under proper regulations. When prices are right now, suspicion lurks in the minds of the public that they embody extortion. When the oil magnates out of the goodness of their hearts do the right thing, they are never given credit for it.

### Legislative Workers, Attention!

THE following state legislatures will be in session during 1917, the opening dates being indicated:

Arizona .....	Jan. 8	New Hampshire.....	Jan. 3
Arkansas .....	Jan. 8	New Jersey.....	Jan. 9
California .....	Jan. 8	New Mexico.....	Jan. 9
Colorado .....	Jan. 3	New York.....	Jan. 3
Connecticut .....	Jan. 3	North Carolina.....	Jan. 3
Delaware .....	Jan. 2	North Dakota.....	Jan. 2
Florida .....	Apr. 3	Ohio .....	Jan. 1
Georgia .....	Jun. 27	Oklahoma .....	Jan. 2
Idaho .....	Jan. 8	Oregon .....	Jan. 8
Illinois .....	Jan. 3	Pennsylvania .....	Jan. 2
Indiana .....	Jan. 4	Rhode Island.....	Jan. 2
Iowa .....	Jan. 8	South Carolina.....	Jan. 9
Kansas .....	Jan. 9	South Dakota.....	Jan. 2
Maine .....	Jan. 3	Tennessee .....	Jan. 1
Massachusetts .....	Jan. 3	Texas .....	Jan. 9
Michigan .....	Jan. 3	Utah .....	Jan. 8
Minnesota .....	Jan. 2	Vermont .....	Jan. 3
Missouri .....	Jan. 3	Washington .....	Jan. 8
Montana .....	Jan. 1	West Virginia.....	Jan. 10
Nebraska .....	Jan. 2	Wisconsin .....	Jan. 10
Nevada .....	Jan. 15	Wyoming .....	Jan. 9

The 64th Congress, second session, convenes December 4, 1916.

The field is urged to keep in touch with A. A. G. O. headquarters and call for assistance whenever needed. Copies of the New Jersey law will be supplied on request. Propaganda material for publication in this journal should be sent us, together with list of persons to whom marked copies of the journal should be mailed. State legislative committees where there are such will be aided to the fullest extent possible by the A. A. G. O.

When circularization work is required and state associations have no office facilities for handling the work, call on the A. A. G. O. We will supply the clerical work free of charge, the state bodies furnishing the printed matter and postage when able to do so. If unable to provide for this ex-

pense, the matter should be brought to our attention and a special effort to raise funds for this particular work can be made jointly by the state and national organizations, utilizing A. A. G. O. field men who are then at work in the state requiring the finances.

Should particular members of the legislatures friendly to the garagemen and dealers desire information which the legislative worker is unable to be furnished, put this member in communication with A. A. G. O. headquarters and we will answer all his questions. When a legislator is found to be unfriendly, call on us for help in convincing him of the justice of our legislative cause.

Forty-two states ripe for action this winter! Are you ready to do your part of the work, brother? We are, and now most earnestly call upon you for your vigilant and active interest in the important work before us.

### Repurchasing Bankrupt Stocks

AT the recent St. Louis convention of the American Association of Automobile Accessory Jobbers, among the recommendations adopted was the one that manufacturers, in the interest of a stable market, repurchase bankrupt stocks of their own trade-marked, fixed-price goods.

A most excellent proposal is this. The pirate in the retail trade, the price-wrecker and t'ell-with-anybody-else-in-the-retail-business-but-me fellow obtains his supplies from just such sources, and a demoralized market militates against the welfare of the manufacturer as the retailer and jobber.

The retailer and jobber are in business for a distributor's profit. If any condition arises which deprives him of that profit he loses interest in your goods, Mr. Manufacturer, and will replace them with another line. This, of course, you do not want him to do, and by adopting the recommendation referred to you will obviate the necessity of his ever doing this.

Price maintenance means *profit maintenance* and is not a transcendental theory; it is a practical business measure that the organized retail trade are bound to see transmuted into a solid merchandising fact. Wise manufacturers are rapidly sensing this great truism.

### Use the A. A. G. O. Emblem

ALL members of the A. A. G. O. are entitled to use the Association emblem

On your letterheads, business cards and other printing it will add prestige and weight to the message or communication that accompanies it. It will show that you *do not stand alone*.

### Forms For Collection Follow-Up.

W. A. Merrifield, of the Batavia Garage Co., Batavia, Ill., writes: "If you have any forms pertaining to the collection of accounts will be pleased to receive copies of same as we wish to adopt a form that will fit our business when sending out second and third notices of over due accounts. If you have any forms applying to garage terms will be pleased to have copies of those also.

The following are recommended:

First Month—Regular statement.

Second Month—"This account may have slipped your memory. It is important to us, however, as a large share of it represents cash paid by us in advance of the service.

"Will you send check at once, not waiting until the end of the month."

Second Month, 2nd Week—"We hope the payment of this account will not be longer delayed. We do not want to take any except the friendliest methods in collecting this account, but we must have the cash. Please favor us by sending check by return mail."

Third Month—"We have not received check for this long past due account and it should receive immediate attention. We do not wish to burden you with costs, and these costs can be avoided if we receive your check before ..... 191... Otherwise the account will be turned over to the American Association of Garage Owners of which we are a member for action by their Collection Department."

Third Month, 2nd Week—"Send account in to the A. A. G. O., together with 15c in stamps to cover postage, etc. Many debtors respond to letters from the Association where they pay no attention to appeals from the individual garage man or refuse point blank to pay. Our Collection Department sends out three letters and they collect eighty per cent of the accounts. The remainder can be followed up with our Supplemental Bonded Attorney Plan.

Garage terms usually are cash, except when customer opens an account, then the credit of the individual should be looked into; if acceptable, regular settlements should be agreed upon, preferably monthly.

### Eliminating the Jobber-Retailer

"We have had good success in eliminating the jobbers who also retailed to our customers—selling, in many cases, at prices as attractive as those we secured," writes Bro. A. D'Ettel, secretary of the Garage Owners' Protective Association of San Francisco.

"Recently three houses that did a retail as well as a jobbing business have cut out the retail part of it and now are doing strictly a jobbing business. It is natural, of course, that these houses are receiving the hearty support of our members.

"We are sure when the country trade learns of this change its members will patronize the strictly wholesale houses exclusively. This change was not brought about by coercive methods, but by our ability to co-operate with the house that started to co-operate with us."

Mr. D'Ettel and his associates believe, also, that the jobbers' organiza-

tion and the rules of trade promulgated by it have had much to do with this change.

The outcome of this change has been to induce the garage operators to enlarge their stocks and pay more attention to supplying the needs of their customers.

### Better Business and How to Secure It.

R. A. Hubbard, of the Independent Garage, Battle Creek, Mich., gives his recipe for business building in terse and effective sentences. He writes:

"We believe that up to the present time, garages have been looked upon by the general public without proper business respect. The only way to alter this opinion is to give the customer at all times a square deal. He cannot expect, when you give him a square deal at all

### Almost Too Good to Be True.

By W. S. Young, Larned, Kans.

Just received a copy of your monthly magazine for the garage, salesroom and shop, and will say that it is almost too good to be true. Cannot afford now to subscribe for it. The garagemen need all the help they can get to fight their battles.

times and have once gained his confidence in your work and in the goods which you sell him, to have any excuse to complain about his bill.

"Co-operation of all the dealers and garage owners has done and can do more than anything else in the way of putting garages in their proper place in the estimation of the public. The dealer who is in business today and gone tomorrow is the one who does the most harm in turning automobile owners against garages, as the car owners lose confidence because of these changes.

"Prompt and efficient service, courteous attention to all orders, and above all a clean floor and a neat garage will bring good business and satisfied customers."

There is much food for thought in all that the Battle Creek brother says.

### Michael Higgins Dies.

Mr. Michael Higgins, treasurer of the Higgins Spring & Axle Co., and prominent citizen of Racine, Wis., passed away October 9, after a brief illness. He was a man of high character and great business acumen, his death being a loss to his city and state and to the industries with which his name has become prominently identified.

### Status of Ford Tractors and Trucks.

Advices received at this office are to the effect that The Ford Motor Co., has been held up on deliveries of its pleasure cars because of lack of hoods. They have now made arrangements to get 2,000 of these per day, but this size quantity will not do much towards catching up with back orders, which amounts to 125,000 cars.

One of our informants writes: "You will no doubt recall the Ford tractor was started a couple of years ago and nothing has been done with it. Only last night one of my associates had dinner with Mr. Edsel Ford and the truck proposition was discussed at that time. He found that right now the tractor is not perfected, as already intimated in the columns of your estimable journal, and it may be some time before it meets the approval of the Ford Company. We also found that no materials have been ordered for the new Ford truck and that they will go through a long experimental state before deciding definitely on the manufacture of them."

The different makers of attachments, including trucks, have received this piece of news with, very naturally, some degree of satisfaction, while the tractor makers say they have never taken the Ford tractor enterprise seriously.

### Uniform and Fair Prices For Repairs Advocated.

W. S. Young, distributor of automobiles and tractors at Larned, Kans., discusses repair work charges in a communication to the A. A. G. O. He writes:

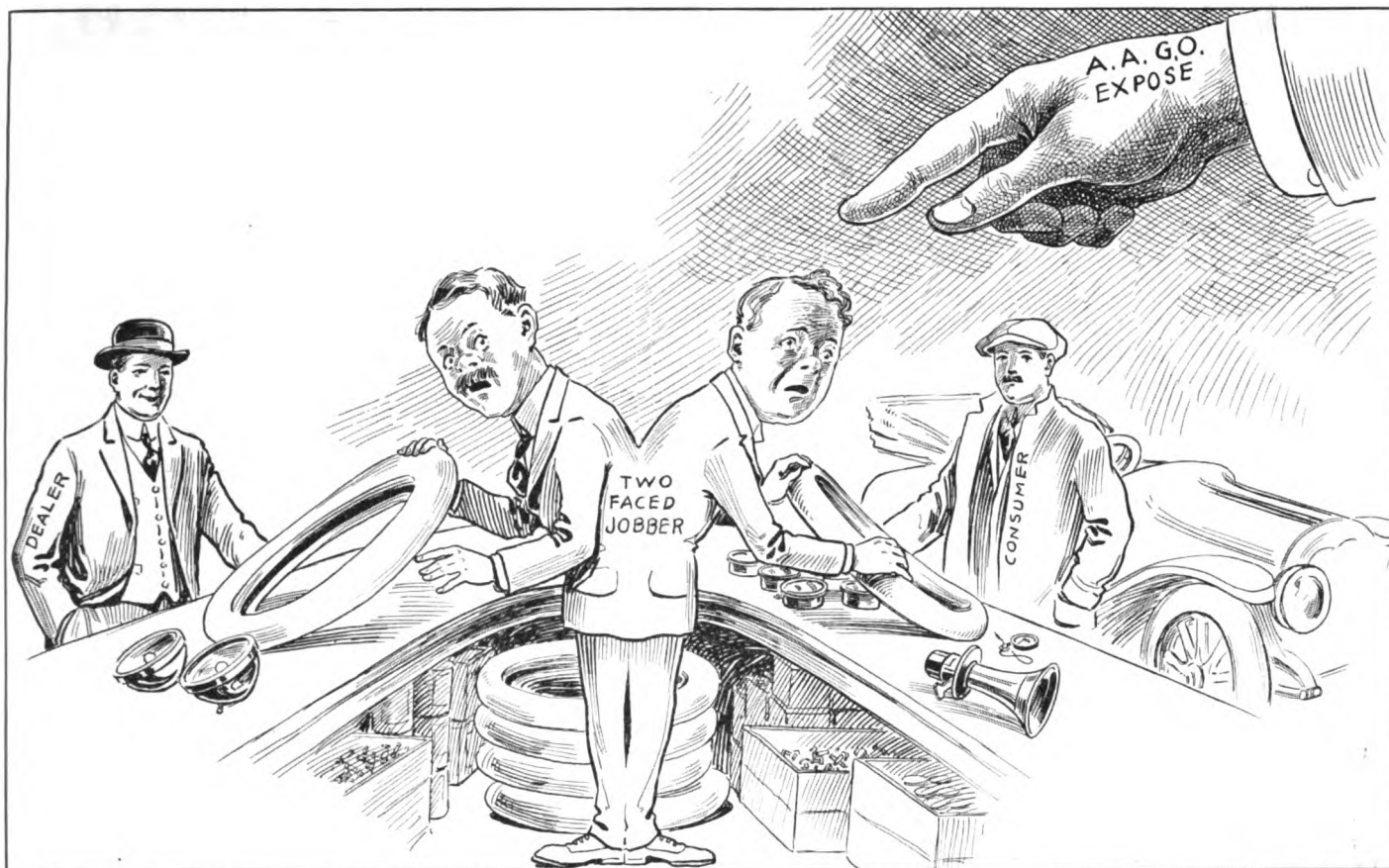
We are charging seventy-five cents an hour for our best mechanics and sixty cents and forty cents for our other men. We are now raising the rate to \$1.00, seventy-five cents and sixty cents. We do not run a Cheap John shop and do not want it to be classed as such. That kind are soon forced to quit—one of them going out of business in this town now—while we are building a new salesroom garage 130x40 feet. Our shop will be 40x80.

All good garages and shops should have uniform prices for the same kind of work. A \$100.00 month mechanic is worth \$1.00 an hour to a customer and lower cost help in proportion. This will also give us a reasonable profit.

"As nearly all motorists are tourists, uniform prices for the entire country are desirable and would stimulate confidence in us."

A man in Cuba writes the Bureau of Commerce at Washington that he contemplates entering into the automobile business and desires to be placed in touch with manufacturers of motor cars not already represented in that island.

## A Game That Won't Work Any Longer



The square-deal jobber never does this. He sells the garageman and dealer, and then protects him in his sphere of activity. Inquiries are referred to the nearest dealer. He knows that the cream as well as the skimmed milk of the consumer trade belong to the retailer. There are many square-deal jobbers. Is yours one, Mr. Dealer and Garageman?

### Accessory Jobbers Hold Successful Meet.

The National Association of Accessory Jobbers held its most successful meeting at St. Louis, October 5-6, the attendance being large and enthusiasm at high-water mark. The membership has increased to 291 members, 147 being jobbers and 144 co-operating manufacturers. The feature of the meeting was plans for the creation of an adequate standard of practice. Action was taken, as follows:

Greater co-operation with the retail organizations recommended.

Committee formed to investigate overhead expense.

Manufacturers urged not to place excessive guarantees upon their goods.

Charging 10 per cent on returned goods again recommended.

Practice on the part of newspapers of using a car distributor as bait for participation in a blanket ad by the distributors' dealers condemned.

Car manufacturer strongly criticised for buying more accessories than he needs for car equipment and disposing of same at low prices to branches and dealers.

Trade directory publishers urged to co-operate with jobbers in compiling jobber's lists.

Jobbers urged not to supply catalogs to dealers, because practice is said to upset established trade conditions.

Standardization of shipping and packing urged and movement among manufacturers toward small shipping units commended.

Manufacturers requested not to give prizes to salesmen of jobbers, as this practice was believed to operate in the direction of upsetting jobbers' regular business.

Manufacturers urged to repurchase bankrupt stocks of their own and prevent the market being flooded with such goods at ruinously low prices.

Rebates to dealers condemned.

Dealers urged to conform to terms of purchase agreement regardless of whether there is a cash discount, and manufacturers urged to put their business on a more uniform discount basis.

### The Illinois Convention.

The Garage Owners' Association of Illinois held its semi-annual convention at Rockford, Ill., on Oct. 16th and 17th.

W. B. Taylor, president of the Rockford Automobile Trade Association assisted by Jud S. Joslyn, a prominent garage owner and president of the Rock-

ford Chamber of Commerce, welcomed the delegates.

Officers of the State Association are: President, W. W. Ingram, Rutland; Vice-Presidents, William L. Rudd, Chicago, John McNeil, Centralia, and A. C. Hood, Sparta; Secretary, J. C. Thorpe, Urbana; Treasurer, H. E. Halbert, Chicago; Director, J. L. Murray, Bloomington.

The following addresses were made:

"A Standard Service Warranty For the Automobile Dealer."—H. W. Drew, manager of the service department, Nordyke & Marmon, Indianapolis.

"Cost Keeping an Aid to Better Business."—Robert C. Daley, Emerson-Brantingham Co.

"Commercial Reports, Collections and Credits."—T. J. Nealis, Bradstreet's.

"The Used Car Problem."—H. A. Amerman, secretary, Champaign County Automobile Trade Association.

"Measured Service and Flat Rates as a Basis of Garage Service."—Gail Reed, Walker Electric Vehicle Co., Chicago.

"Price Maintenance and the Stevens Bill."—W. L. Waddell, Goodyear Tire & Rubber Co., Akron, O.

On the first evening the visiting ladies were entertained at a theatre party, while the men joined in a smoker at the Nelson Hotel. The convention closed with a banquet at the Country Club.



# New System of Accounting

## Morris Cash and Credit Register Leaves Nothing to Chance — Makes Full Daily Record of All Cash and Credit Transactions

Garagemen and auto dealers will not count it lost time to examine into the merits of the Morris cash and credit register.

The interlocking features of the machine appear to be so effective that the proprietor himself, or any of his employees, in making any sort of a transaction, is forced to make an entry of such a nature that the record-sheet, taken from the machine at the end of the day, not only indicates the amount involved, but also gives the identity of the salesman making the sale or receiving money, as well as telling in each instance who the customer is. In making any sort of a transaction, either in charging merchandise or labor, receiving money on account, paying out money, making a sale for

A store which does not, or cannot force a record of every transaction loses a certain per cent of its profits every day.

Some garagemen resent having the fundamental weaknesses of their business system pointed out to them. They do not like to admit that they have any losses and

that will assist him in making more money. The bigger and broader the business man, the more readily he will admit any weakness in his method of handling his transactions, in the hope that he may find a way to stop his losses.

The system described above is sold at a



Morris Register.

cash, or sending out goods C. O. D., before a receipt can be issued, an entry showing who is to be charged or credited, must be made in the hand-writing of the person making the transaction. Before the cash drawer can be opened, the clerk, mechanic or other employee must take the receipt in his hand and remove it from the machine, thus forcing on a record-sheet all the vital information concerning the transaction.

This system appears to be peculiarly adapted to the garage business, since it turns the light of exposure on the dangerous hidden losses or leaks from which the garage business so often suffers. The receipts which the clerk or other employee is required to issue on all transactions are plain and readable and recite the exact nature of each transaction. One of the strongest features of the system is the evident fact that a garageman can keep an accurate account of all merchandise sold for cash, credit, or sent out C. O. D., thus eliminating the necessity of frequent and troublesome inventories.

seem to feel that such an admission would reflect on their ability to properly conduct their business. To feel this way is wrong; for a business man to admit that there may be better methods than he is using would prove that he is big enough and broad enough to face actual facts in his business, and that he will welcome any suggestions

very moderate price and is being put out by the Morris Cash & Credit Register Company, Omaha, Neb., having a Chicago salesroom at 2002 Continental & Commercial Bank building. This company will be glad to assist in a thorough investigation of their system by any interested garagemen who will call or write.

*Daily Record Sheet for May 1<sup>st</sup> 1916*

1054 1066 <i>Cash</i>	3700 3701 <i>Paid Out</i>	5509 5511 <i>Rec'd on Acct.</i>	23526 23581 <i>Charge</i>
a — 80			
a 5 00			
	2 00		13 10
		25 00	
a 7 50			
a 1 00			
	1 25		6 00
		10 00	2 80
a 2 25			
a 20 00			
a 3 50			
			1 00
a 11 00			
a 1 10			
a 1 40			
		12 50	7 50
a — 66			
a 2 80			
a 4 80			
			2 70
61.81	3.25	47 50	33.10
47.50 <i>Rec'd on Acct.</i>			1232.15 <i>Outstanding Acct's Not Found</i>
109.31			1315.25
3.25 <i>Paid Out</i>			47.50 <i>Rec'd on Acct.</i>
\$106.06			\$1267.75 <i>Outstanding Accts.</i>

*Ch. Cash Reg. A-723*  
*Emp. Red. July 35x4*  
*A. C. Davis Gas 1.12*  
*Harold Ford 12.00*  
*J. Hill. Exp. on Supplies*  
*F. J. McCarthy On Acct*  
*Hand Klason F-540*  
*AM Supplies H-305*  
*A. L. Clark Wash. Brown 34x37*  
*A. L. Jones. Garage*  
*A. H. Murphy*  
*Tail Lamp D-56*  
*A. H. Davis. In full*  
*1 Gal Oil 1.12 5 Gas 1.15*  
*Typo L. Klason*  
*A. V. Minor F-138*  
*J. Hill. a. S. Exp. Reg. 1.30x3*  
*Diamond Pump. P-76*  
*5 Gal Gas*  
*Harold Simpson 14x-15.490*  
*A. a. Murphy*  
*Rep. on Engine*  
*A. B. Jones. On Acct*  
*3 Gal Gas*  
*Tail Lamp - D-56*  
*Emp. Red. Inver. July 33x4*  
*A. Davis*  
*A. S. Smith Lamp*


# Stopping One Important Garage Leak

## A Transient Ticket that Doubled the Small Cash Receipts—How It Is Used—A Business Builder—Electric Vehicle Rates

By J. C. BARTLETT,  
President, Bartlett Garages, Inc., Philadelphia.

Below is given sample of our Transient Ticket, the use of which has resulted in more than doubling the small cash receipts from the garage which had formerly been lost through carelessness.

The form shown is printed on heavy

N <sup>o</sup> 191		CAR RECEIVED	
CASH CHGE		 OCT 26 1916	
Name _____			
Home Address _____			
Make of Car _____			
Tag No. _____		State _____	
ORDERED	DONE	ORDERS	PRICE
		Day Storage, 6 A. M. to 12 NT.	
		Night " after 12 NT.	
		Wash and Polish . . .	
		Battery Charged . . .	
		" Watered . . .	
		Tire Changed . . .	
		Gasoline _____ gal.	
		Oil _____ pts.	
		Repairs, see Job No. _____	
		Accessories . . .	
		Sales Slip No. _____	
		" " No. _____	
		" " No. _____	
		Call or Delivery . . .	
		Misc. Charges . . .	
		Total	

**Claim Check**

*This check identifies you and is to be shown when purchasing supplies, etc., and must be surrendered to obtain the car.*

*Cars are accepted only at owner's risk of fire. Loss articles must be checked in Store Room.*

N<sup>o</sup> 191

When a car enters the garage, the time is stamped on both the original and the duplicate, the claim check is given to the patron and the cardboard slip is placed in the car. The white slip or bill is kept in a rack in the telephone operator's office, where it is accessible night or day, without bothering the main book-keeping office.

We request the patron to write his own name and home address, etc., on the card, in order to prevent error and at the same time, this gives us the owner's signature as authorization for the charge. Any work to be done on the car is entered on both original and duplicate, and when it is done, it is checked off in the "done" column. All sales slips, either from garage, accessory or repair departments, are charged against the number of the card instead of to a name, and are immediately sent to the outside office, so that the bill can be totaled up without previous notice.

The owner can obtain supplies only by presentation of the claim check, and by having the slips immediately turned in to the office and attached to the duplicate we have absolutely prevented what used to be a very frequent occurrence and loss; that is, that perhaps hours after a customer had paid his bill and departed, the sales slips would turn up amongst the monthly charges.

Where a transient customer is in several times during the month, the original, duplicate and claim check are fastened together and turned in to the main office where they are entered on the monthly bill. Track is kept of the numbers issued, and every slip must be accounted for. This we have found to be a great preventive of loss.

The time is stamped on the card by

the use of the Cosmo Time Stamp, which is advertised in your columns.

We also inclose our rate card, which may be of interest to American Garage readers. They show the following schedule of prices:

### MONTHLY RATES.

Including Garage Service, Storage, Washing and Polishing, and Lockers.

#### Gasoline Cars.

Roadsters .....\$25.00 per month  
 Very small Touring Cars... 25.00 " "  
 Touring Cars ..... 30.00 " "  
 Limousines, Landauettes,  
 etc. .... 35.00 " "

The above rates apply to cars having the usual equipment of bright parts. For cars



The Bartlett Garages.

having more than the usual amount an additional charge of from \$5.00 to \$10.00 will be made to cover the extra labor entailed.

Special reduced rates for continuous storage over a minimum of eight months given on application.

#### Electric Cars.

Open Cars .....\$15.00 per month  
 Inside driven Brougham or  
 Coupe ..... 20.00 " "  
 Outside driven Brougham or  
 Coupe ..... 25.00 " "

Flat rates and delivery service for electric cars quoted on application.

Current for charging electric vehicles sold at the rate of 6c per Kilo-Watt including attention by expert battery men.

Mr. Bartlett concludes his interesting communication with a wish for the continued success of the Association.

### The Ohio State Meeting.

The Ohio Automobile Trade Association held its second annual convention October 25th and 26th at Columbus, Ohio, making the Virginia Hotel the headquarters.

The address of welcome was made by Hon. George J. Karb, mayor of Columbus. At the afternoon session on the 25th H. J. Schwartz, president of the Standard Motor Car Co., spoke on "Ethics of the Trade—Relation of Dealer and Owner After the Sale."

The banquet was held Wednesday eve-

ning at 7:30 and an enjoyable time was had. Stanley Roberts of the Roberts-Toledo Co., Toledo, O., and G. A. Waddell of the Goodyear Tire & Rubber Co., Akron, O., made interesting talks.

At the morning session on the 26th J. J. Aldrich addressed the convention on "The Used Car Problem," while the afternoon session was enlivened by an address by J. P. Gordon, president of the J. P. Gordon Co., on "An Outsider's Inside View of the Automobile Business."

Secretary Price was rather disappointed at the attendance, but consider-

ing the fact that the association is but a little more than a year old and the members not having as yet been imbued with the real co-operative spirit, he should take heart and work just that much harder for the next one.

The following message was sent from A. A. G. O. National Headquarters.

All interests working in harmony for an adequate lien law in Ohio can hardly fail of success at the next session of the legislature. Your efforts will receive the fullest support and co-operation from this association. Yours for a 100% membership in the old Buckeye state.

AMERICAN ASSOCIATION OF GARAGE OWNERS.

### Keeping Track of Tires

Perhaps there is a better and simpler way of keeping track of tires than the one adopted by West Broadway Garage, Onawa, Iowa. If so, no one would be better pleased to learn of it than K. A. Pullen, proprietor of the garage. Likewise, AMERICAN GARAGE AND AUTO DEALER would be decidedly pleased to publish it.

The garage owner is an accessory dealer who gets the full brunt of a tire adjustment controversy. Oftener than not the car owner asking an adjustment is otherwise a valued customer. It is like asking an insurance agent to adjust a fire loss. The first point of disagreement usually is the length of time the casing has been in use. And right there is where Mr. Pullen's system begins to be very useful.

Mr. Pullen wrote Stewart Lever about his plan as follows:

Soon after I entered the garage business I found that I would have more or less trouble with tire adjustments, and to remedy this I devised a tire record to keep track of all tires sold.

At first I kept the record in a rather haphazard manner in a self-ruled book for the purpose. Later I improved on the book, making it more extensive, so that I could keep a complete casing inventory and a complete history of the tires between the same covers.

Now, I have improved my plan and made it into a card index system which, I believe, will work out much better.

When a shipment of tires is received, each tire is given a card, and lines 4 and 5 filled out, with the exception of "wheel."

- |                     |              |             |
|---------------------|--------------|-------------|
| (1) Name.....       | Address..... | No. ....    |
| (2) Make of Car.... | Model....    | No. ....    |
| (3) Date on.....    | Speed .....  |             |
| (4) Make.....       | Size.....    | Style ..... |
| (5) No.....         | Type.....    | Wheel ..... |
| (6) Date off....    | Speed.....   | Mileage ... |
| (7) Remarks .....   |              |             |
| (8) .....           |              |             |

The cards are then filed under tabs, according to sizes, making the complete inventory.

When a casing is sold the proper card is hunted out and lines 1, 2 and 3 are filled out and also "wheel" in line 5, and then filed alphabetically.

It is our aim, if possible, to fill out lines 6, 7 and 8 when the tire is discarded, thus completing the history.

No tire is guaranteed unless the car is fitted with a reliable speedometer, in working order.

Needless to say, we experience no trouble with "tire hogs."

It would be a money maker for tire manufacturers to invest a sum less than \$5 for an outfit of this kind for their

agents, and require this positive information on all adjustments.

Of course, the dealer would have to be reliable, to make the system work out properly.

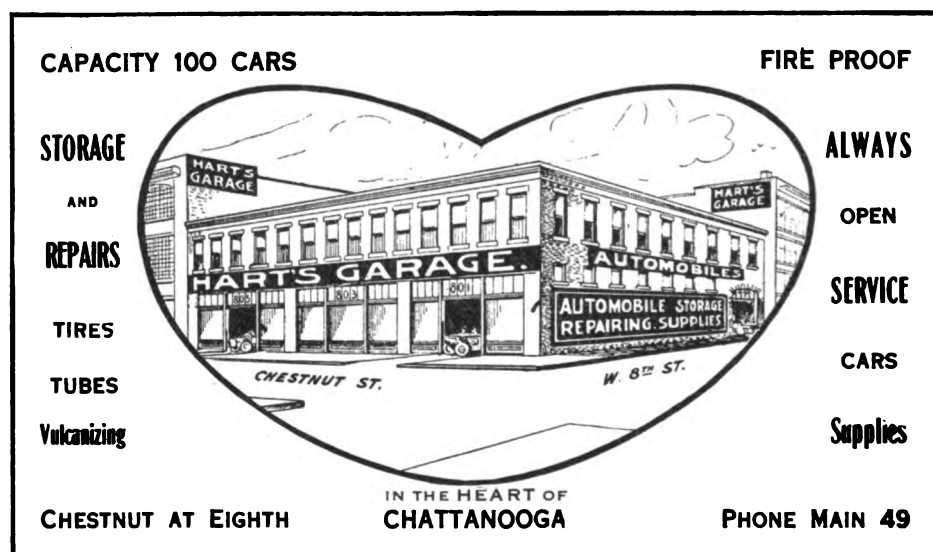
### One of Chattanooga's Leading Garages.

The business card used by Hart's Garage, Chattanooga, Tenn., is shown below. It constitutes a unique piece of advertising. The building occupied by Hart has an 85-foot front on Chestnut street and 130 feet deep on West Eighth street and is two stories high. The second story is reached by elevator. The lower floor is used for office, store room for tires, supplies and accessories,

every direction advertising Hart's Garage, stating its location, giving the number of miles to Chattanooga, and at cross roads an arrow on the sign shows which direction the driver should take.

"We keep our garage clean, the inside walls white, and the outside walls painted every fifteen to eighteen months. We have a large electric sign, fourteen feet long and nine feet high, which can be read from four directions. It is in the shape of a heart with the words 'Hart's Garage' illuminated, and a border of red lights around the edge of the heart. A rotating motor working the lights in the border gives the effect of wheels revolving.

"We do considerable local advertising,



and storage of cars. The part fronting on Chestnut street is used for the display of new cars.

The Chestnut street end of the second story is occupied by the machine and repair shop. The extreme West Eighth street corner of the building contains a paint shop, and adjoining it is the top making and upholstering department.

"We have a battery recharging and repair station, and in fact are prepared to do everything under our own roof that is required to put a car in first class shape, except wood work," writes Mr. R. H. Hart, the proprietor. "We have found that being able to store a car, keep it in condition, and thoroughly overhaul it when necessary, has brought us much business.

"Our storage business is large and the transient business we have is best illustrated by the fact that we have had over 1,200 transient or tourist customers within the past twelve months. We charge tourists no more for service or repairs than we do our own people. Chattanooga is on the Dixie Highway and good roads radiate in every direction from this city.

"We have signs for 100 miles out in

but only in the daily newspapers. We sell the Federal truck, Briscoe and Aperson cars."

Mr. Hart is one of the first Tennessee garagemen-dealers to join the A. A. G. O., and is a believer in collective as well as individual enterprise and forehanded news.

### Contracts For Output of Strong Oilers.

Smith Form-a-Truck Co., Chicago, has bought from the Perkins Manufacturing Company of Des Moines, its entire product of Strong Sight Feed Oilers. The deal is an unusual one, and evidences the confidence the Form-a-Truck people have in this oiler. It is a force feed and practically solves all Ford car lubrication problems: It costs but \$5.00, is guaranteed for the life of the Ford motor and is said to save its cost every year in lessened consumption of oil.

The use of the A. A. G. O. emblem on your stationery will indicate to those who see it that you do not stand alone, but have a great national institution behind you. Electrotypes supplied at 50c.

# Strong For A. A. G. O. Plans

**Association Efforts to Improve Business Should Be Encouraged—Insurance Rates Too High—Standardize the Tire Business—Organization Needed**

By E. B. Jones, Bastrop, Texas

A copy of the AMERICAN GARAGE AND AUTO DEALER came to me in the mail yesterday morning (Sept. 19, 1916), and I have read it from cover to cover with the greatest interest. Surely nothing could appeal to us as servants of the motoring public more than this magazine. Every article is of the keenest interest. Every feature of the business which your staff of officers have under consideration is presented most concisely, and I wish to know more about your organization, your methods and your ideas.

Kindly advise me as to necessary qualifications for membership in the organization; also I want to become a regular subscriber for the official publication. I want to obtain the signs, the benefits of the Bureau of Registration of Automobile Workers, the insurance features, etc.

## Enthusiastic Over Craft Prospects

I have been in the garage business about two years—that is, for myself—have been employed by others in the automobile business for the past eight years, selling cars, accessories, tires, buying for garage and supply houses, keeping books, etc., and started for myself a short time ago, and am very enthusiastic over the prospects that open up for the live garage and repair man, the tire and accessory dealer, and the car dealer who can bring the buying public to the point of recognizing him as a *real* factor in business, and as an honest man working for their interest and not alone for the dollar.

In this country down here the garage man is considered little short of a licensed highwayman. He is supposed to charge as long as the customer can find strength to hand over the coin, and, sad but true, he has in too many cases earned just this reputation for himself. We are glad to note there is

a change in the atmosphere, and we believe that, by careful management and right treatment, we will soon be able to see a customer come in with his

## Funny, Isn't It? Needed A. A. G. O. Prodding

It's funny that a large tank manufacturing concern would disregard just complaints from a small town garageman, refusing to investigate or give the garageman any satisfaction as to why goods ordered and paid for many months ago had not been shipped, and then upon hearing from the American Association of Garage Owners to the effect that this garageman is a member of the Association and should be given satisfaction at once, they get busy and ship the goods. Note the following to the A. A. G. O.:

"We are in receipt of your letter of August 30th in regard to one of your members, Mr. ———, of ———, Minn., and on looking over our records we find that we owe him one No. 2 and one No. 3 tank. We are forwarding to him today these tanks and hope he will receive them promptly."

It pays to belong to an organization like the A. A. G. O. because the firms you deal with are made to realize that you do not stand alone, but that your just demands will be backed up by an organization of many thousand garagemen, dealers and shopmen having a well-equipped Legal Department and nation-wide publicity facilities.

money in his pocket, without a body guard and feeling as though he were going into a regular place where honest men and courteous gentlemen do business.

## The Robber Insurance Rates

Our insurance rates are fierce, our labor proposition is almost impossible, our credits are the worst, and collecting is nearly impossible once a customer has taken his car out of the garage. This applies to an altogether too large a portion of our business. The country is infested with rank farmers who have never done anything but raise cotton until a few months ago, then they bought a Ford car, drove it till they could steer it both forward and backward; they buy a list of tools compiled by Sears-Roebuck or some other equally well-informed concern, rent a \$10.00 barn, and then go into the garage business, doing work for less than a man can hire mechanics for. And the public then drives up to their door, because the regular garageman has overcharged them on something that he has done for them; then the whole lot of us are abused as a mess of cut-throats.

I hope the time is not far away when no man can obtain employment in a garage without a card showing that he has passed an examination and is qualified to do the class of work for which he seeks employment. I want to see such a sign in every garage, and then we will have to apply ourselves to the task of learning our profession before we can pass the apprenticeship stage.

## Standard Accessories and Tires

I would also like to see a sign in the garages showing that nothing but the standard accessories and tires, etc., are for sale, and that a standard price is charged for all goods, labor and storage, oils and greases; then it is that we will all work together for the up-building and the maintenance of the greatest industry the world has ever known.

## Woods Mobilette Co. Publishes Interesting Book

Perhaps one of the most unique books ever issued and distributed free by any automobile manufacturer is the one going out now from the publicity department of the Woods Mobilette Company, 1509 Michigan boulevard, Chicago. The book in question is entitled "The Greatest of All Tests," with a sub-title of "Your Question Answered by Satisfied Owners."

"As the title indicates, this book is a presentation that is entirely new in the automobile business," said a Woods representative. "So far as is known, no other automobile manufacturer has ever issued so complete or extensive a compilation of the statements of owners who have driven their cars for periods of time ranging from three to four months up to a year and a half or more.

Such exceptionally high averages as

35 to 50 miles to a single gallon of gasoline are repeatedly mentioned by the owners of Woods Mobilette cars, whose letters are reproduced in the book. This is likewise true of the phenomenal tire mileage this car evidently provides its owners, many of whom have driven their Woods Mobilette over 7,000 miles on a single set of shoes.

Copy free, on request, to the Woods Company.



A.O. HACK



## Why Belden Garage Is Successful



C.M. HAYES

"SERVICE which satisfies customers is a far better drawing card than cut prices," says A. O. Hack, of Hayes & Hack, proprietors of the Belden Garage, 2343-5 N. Clark street, Chicago.

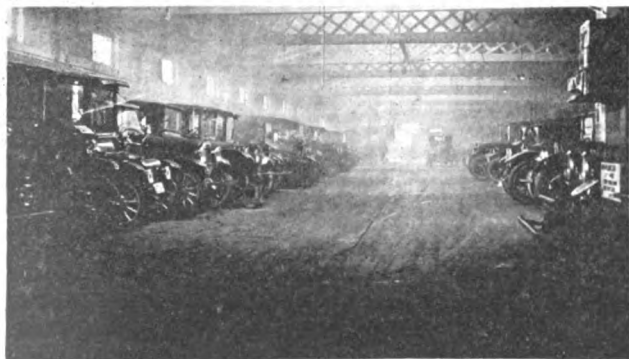
"We don't even pretend to sell anything unless there is a profit in it," continued Mr. Hack. "What's the use of inviting failure by cutting prices? It was a little hard sledding at first to maintain prices at all times but our one effort is to do the work and furnish the supplies when and how our customers want them. We refused to worry about prices at first and now we don't have to. I don't mean that we charged anything but a reasonable profit but I do mean that we never tried to get or keep a customer by selling either service or an accessory at a loss. No reasonable car owner would ask it and we have found it is more profitable to stop doing business with the unreason-

able ones. It wasn't always easy to stick to our guns on the proposition of performing only the best of service and selling nothing below a reasonable profit; but we have made it win. We even made a profit the first year and now are doing all the business we can in our present quarters. We believe we are right from our own experience and naturally will continue in the same way.

"We are carrying the idea a little farther now. Occasionally we find a customer is buying his oil, gasoline and accessories elsewhere. Perhaps he also is having his repair work done elsewhere. Our rates are based on furnishing

storage, care, repairs, oil, gasoline and accessories. We cannot make our estimated profit by simply selling storage space. Consequently we hunt up another customer and a new car takes the place of the other at the end of the month."

All this may sound somewhat dictatorial.





On the contrary, when one sees the cordial relations between Messrs. Hayes and Hack and their customers it simply amounts to frankness; an acknowledgment by the garage owners that they want a fair profit and a like acknowledgment on the part of the car owners that they are willing to pay it.

This isn't an editorial article nor is it in any way an advertisement of the Belden garage. It was put up to the writer to find a garage that looked fairly prosperous and to learn from the proprietors why they had prospered. And the Belden garage happened to fit the specifications and to be the nearest to his home. It looked prosperous and Mr. Hack happened to be on duty. He didn't warm up much to the plan. Oh, yes, the garage was making money but he was pretty busy and—

Such talk wouldn't get anywhere in a national symposium of garage owners, telling their little short cuts to success through the AMERICAN GARAGE AND AUTO DEALER and Mr. Hack was frankly told as much. What the writer wanted was a plain narration of the points on which was based the success of the Belden garage. The AMERICAN GARAGE AND AUTO DEALER did not care whether it was the Belden garage or the Blue Island or Bridgeport garage. For the benefit of its 14,000 subscribers, it wanted to publish the methods which had been tried and found good in making garages profitable.

Mr. Hack saw the point at once and willingly entered into the spirit of co-operation which his remarks indicate. And it was only by accident that the best point of all was mentioned.

A customer was driving out of the garage and spoke about a repair on his car. Mr. Hack replied that Jury & Co. had made the repair and would send in the bill at the end of the month. When the customer had vanished, Mr. Hack was asked why, with an excellent repair department, he had not made the repair instead of having Jury & Co. do the work.

"That's just another way we have of being sure we are not giving something for nothing," said Mr. Hack. "During the first year we found we had to do a lot of little jobs and furnish many small parts for which it was hard to make a charge. We conceived the idea of hiring a first-class repair man and running the repair department under another name. That is how Jury & Co. came about. Regular garage and accessory bills are made out by the Belden garage. All repair and minor items are made out by Jury & Co. It might look rather small for the garage to make a five or ten-cent charge but Jury & Co. make a good living on such charges. There is no deception about it as our customers know we own the repair department."

As will be noted from the illustrations, the Belden garage is a good looking, one-story building of first-class brick and con-

crete construction. It is 50x250 feet, with all necessary conveniences and no gingerbread work inside or out. The garage now stores sixty-two cars; its full capacity.

### A Message of Organization and Good Will.

By Wesley T. Christline.

"Collective evils are made up of individuals evils, hence the making over of the individual strikes at the root of the whole question."

Individuals are not made over but, with the information, light and intelligence they receive, they make themselves over into better business men and more useful citizens.

This whole question of organization necessarily must base on the fitness and willingness of the individual to co-operate with others for the promotion of common interests.

In a business sense the interpretation of co-operation has been narrowed down to the question mark: "What is there in it for me?"

Undoubtedly there is more in it for you than ever you will put into the work, but it should be self-evident to any sane man that if he goes into organization work with the purpose and intent of finding something of personal interest and advantage in a strictly monetary sense, he may or may not be disappointed.

If, on the other hand, he shoulders his share of the load because he realizes it belongs to him and that he should carry that part of it, he is certain to find "more in it" for himself than tongue can utter or pen express, and it is often expressed in dollars and cents as well as head-and-heart satisfaction.

Garage Efficiency has given place to a more efficient business organization the A. A. G. O. and the American Garage and Auto Dealer—one that insures the perpetuation of the thought of a publication devoted *entirely* to the up-building of the retail automobile interests.

An editor, in the old fashioned sense of the term, is a maker of friends and followers. During the brief while our relations have endured, this editor has felt he was receiving the very best thought and the very best wishes and arousing the very highest endeavors of his friends.

I borrowed a sentence to start this very brief statement. From another of far greater understanding than myself I will borrow a second one which has been said of the true builder:

"It is the constructive spirit, really, that is needed everywhere. Criticism in its best sense can be constructive (and only can be constructive) when the integrity of its true meaning is preserved."

So, before you hastily criticise others,

you men of the garage and the automobile store, get far enough away from yourselves to take a constructively, critical view of yourselves. It may be enlightening.

"Kindness, patience, good will, unselfish consideration build where an unloving attack upon persons only *devastates*"—and with that thought, expressing the modern idea of progress, despite all you may see, hear or think, I leave you.

### Michigan Auto Dealers Hold Lively Meeting.

The second annual meeting of the Michigan Automobile Trade Association was held at Flint, Oct. 12th and at its concluding session elected the following officers to serve during the ensuing year: President, C. W. England, Lapeer; First Vice-President, L. C. Steers, Detroit; Second Vice-President, H. M. Fawcett, Pontiac; Third Vice-President, Ed. Lunt, Flint; Secretary, A. C. Rice, Detroit; Treasurer, George Coleman, Detroit. Directors: A. C. Davenport, Blissfield; E. B. Rankin, Detroit; H. C. Pietrie, Battle Creek; H. J. Hogan, Flint.

Among the subjects helpfully discussed were amendments to the state lien law that will strengthen its protective features, regulation of the quality and price of gasoline by legislation, the attainment of more equitable insurance rates, the used car problem, standardization of garage service, an increase in the membership of the association and greater co-operation between the various branches of the auto trade to advance the mutual interests.

In the discussion of membership work J. C. Thorpe suggested a standard of qualifications as necessary to eligibility as members, but this idea was opposed by retiring President L. F. Bertrau, who contended that all should be made members and then the standard raised. This latter view prevailed.

The report of Treasurer F. A. Bean showed the finances of the association to be in a bad way, the year's expenses having been nearly \$300 in excess of the revenues, Secretary Steers having generously advanced that amount to the association out of his private funds.

A banquet followed the meeting proper, the ladies being present, among them Mrs. L. C. Steers, Miss Mary Bertrau, Mrs. O. M. Blandon, Miss Kate Gunnell, Mrs. E. M. Cummings, Mrs. C. H. Bliss, Mrs. M. Davison, Jr., Mrs. Wm. Faulk, Mrs. E. B. Rankin, Mrs. Frank Grenvel, Miss Nichols, Miss Smith and Miss Campbell.

Motoring apparel should find ready sale in the garage show room. Don't let Uncle Moses sell all the "clothing."

# Morgan is New Head

## Plant Goes to Cleveland—Big Production Increase Scheduled

Guy W. Morgan of the Mitchell Motor Car Co., Racine, Wis., has been appointed president and general manager of the Consolidated Car Co., manufacturers of the Abbott-Detroit car.

Mr. Morgan has been prominently identified with the automobile industry for fifteen years. His first years in the automobile business were given to the

has exhibited a remarkable knowledge of values of parts entering into motor car construction, and his intimate acquaintance with a very great number of dealers and distributors throughout the country puts him in the best of positions to build, economically, a product especially suited to the requirements of the trade.

### A Tribute

Morgan Hammers, vice-president of the corporation, said:

"Mr. Morgan is a man of tremendous energy and possessed of the characteristics that qualify a man for real leadership in the handling of large organizations. Those in the industry that are in position to know, credit Mr. Morgan with being largely responsible for the remarkable progress that has been made during the last five or six years by the Mitchell Co., beginning as it did with a comparatively small production and working up to the present schedule, which is at the rate of 27,000 cars per year.

"Mr. Morgan's connection with the Abbott proposition will complete a series of important plans, recently developed by the company, leading to the material increase in the company's production. The capital stock of the company has recently been increased from five hundred thousand dollars to one million, two hundred and fifty thousand dollars. A new plant is now in the course of construction in Cleveland that will facilitate the production of five thousand cars for the coming season, with provision for a further increase in the production later on."

### New Cleveland Plant Ready Jan. 1

Messrs. Gardiner and Hull, who own and control the majority of the stock in the Abbott Corporation, have been in Cleveland a considerable portion of their time recently and report that the preparations there for the removal of the local plant to Cleveland are progressing nicely and that the new plant will be completed by January 1.

### The Bour-Davis Car

"Button, button, who's got the button?" was the old game of childhood. "Car, car, who's got my car?" brings the old game right up to date, judging by a recent occurrence in Detroit. Incidentally, the up-to-date game proves the assertion of the Bour-Davis Motor Car Company that there are altogether too many cars of any one make that

ago which proved conclusively that affairs may become badly mixed through an error in selecting the right car.

Three lost cars resulted from an incident which occurred outside the Statler Hotel. One of the prominent Iowa dealers of a leader in the automobile manufacturing industry drove up to the Statler and, parking the car he had borrowed at the factory, went inside. Two private owners drove up with cars just like the one parked by the dealer and took places beside his. Then another came up. When the dealer came out he took the first car in the line and got the wrong one, as his own had been stolen. The owner of the car which the dealer had taken came out and took the first car and got the wrong one, and the third man, realizing that a mistake had been made, took the third car and went to the police station to report his loss, whereupon the fourth man also started for the station in the remaining and incidentally the wrong car. From the mixup order was brought with the loss of only the original car.

"Which only goes to prove my contention all along," said C. F. Stewart, vice-president of the Bour-Davis Company, "that people nowadays want a car of a distinction, a characterful car, and one that they will be able to distinguish in the long lines of cars which are found at the curb in any city of the country. The Bour-Davis Company announced at the outset that its cars would be finished in a distinctive style and according to the wishes of the purchaser. This plan has proved most popular. There are also distinctive features about the Bour-Davis that bring it into prominence in the crowd and which practically make it unstealable, owing to the ease with which it may be described."

### Hudson Super-Six Travels Fast, 'Frisco to Los Angeles in 12½ Hours.

"Since speed fiends have torn the law to shreds every motor cop from Bakersfield to San Francisco is on the job night and day," says H. O. Harrison, Hudson distributor for northern California.

"I made a speedy dash between San Francisco and Los Angeles myself recently. The cops did not get us because we were careful not to break the speed limits when they were looking, but it was rather difficult to keep the Super-Six within the law. I left San Francisco at 6 o'clock in the morning and arrived at Los Angeles at 6:30 in the evening. The distance is 500 miles by motor car. This is not the record, but it is right good time and only possible when you maintain an absolutely continuous pace.



President Morgan.

# Large Use of Ball Bearings

## A Symposium of Engineering Opinion in Connection with Motor Car Construction—Information of Value to Auto Mechanics

By ARTHUR V. FARR, M. E.  
Author and Engineer, with SKF Ball Bearing Co.

What is the engineer's verdict today in regard to the use of ball bearings? Is their use increasing in this country, or are they being replaced by other types of bearings? These questions are of interest to the manufacturer and the engineer.

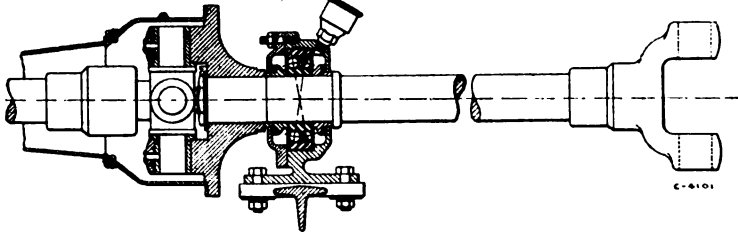
and how should the sizes be selected?

5. What service is derived from the use of ball bearings?

### No. 1

#### Where Ball Bearings Are Used

F. A. Whitten—General Motors Truck



Intermediate shaft of Pierce-Arrow Truck. Ball bearings for this application are almost indispensable owing to the difficulties of making alignment.

Of the manufacturers of 1916 pleasure cars in this country, 67.2% use ball bearings in the gear sets and an additional 16.4% use both ball and roller bearings in the same place; 28.3% use ball bearings in the rear axle and 28.3% use both ball and roller bearings in the same place. 56% use ball bearings in the front wheels. Analyzing these figures makes it clear as to the distribution of ball and roller bearings in the 1916 pleasure cars.

But probably of far greater importance to the engineer than a mere knowledge as to the number of cars which are using ball bearings, is the opinion of the prominent automobile engineers as to the serviceability, mountings, etc., of ball bearings.

A questionnaire was conducted among the engineers of the country to obtain their viewpoint as to the use of ball bearings in car constructions and the answers

Co.—“Our electric vehicles have ball bearings throughout, including the wheels. The efficiency by the use of ball bearings

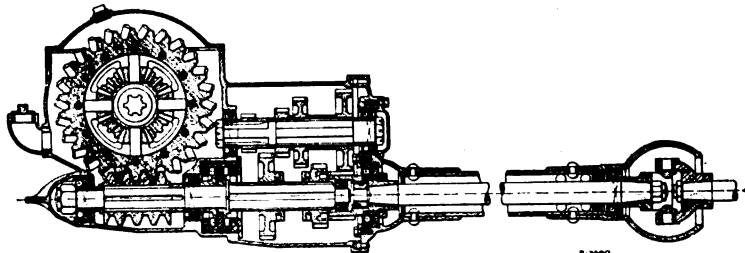
Co.—“We use annular ball bearings in the clutch shaft, forward and rear ends, and in transmission and driving shaft, forward and rear ends.”

Fred Bisantz—Gramm Bernstein Co.—“During the last few years we have used ball bearings throughout in practically every point in our trucks except in road wheels. We are at present using the same practice and expect to continue to do so, as they are absolutely satisfactory.”

W. P. Crystler—Buick Motor Co.—“We are using ball bearings in the following positions on our current models:

“Transmission—primary shaft driving pinion and rear end of primary shaft.

“Rear Axle—propeller shaft, one bearing immediately ahead of spiral bevel pinion and another 6 inches ahead of this bearing. Also a single bearing in the hub.



Above drawing shows the propeller shaft, transmission and worm drive of the Lyons Atlas Truck. The use of wide series bearings on the spline and worm shaft permits maximum capacity with minimum outside diameter of the bearing. The double thrust bearing on the worm is the 1700 series. This bearing provides a separate row of balls for forward and backing thrust, thus increasing the life of the bearing to a great extent, as compared with bearings where both the forward and backing stresses are taken on the same row of balls.

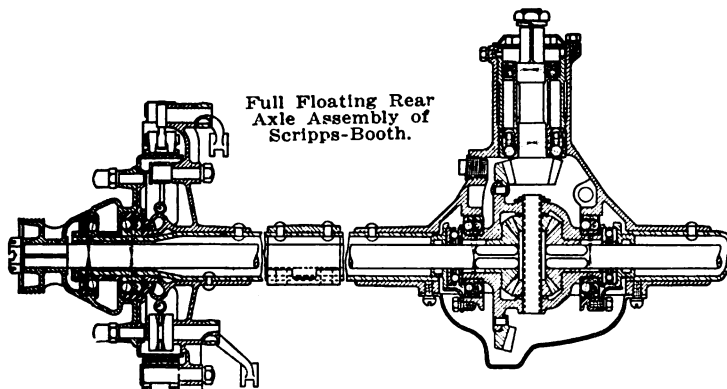
is such that we believe it has never been before equalled.”

“Front Wheels, Clutch Assembly, Steering Gear—front wheel hubs and thrust bearings in the steering gear and clutch assemblies.”

J. M. Howe—Grant Motor Car Co.—“We are at present using ball bearings in the throwout and clutch. In the transmission we are using two ball bearings, one at the rear end of the transmission and the other supporting the rear end of the constant mesh pinion. In our axle we use a ball bearing just forward of the bevel drive pinion and at the forward end of the bevel pinion shaft.”

F. Mueller—Maccar Truck Company.—“About three years ago we constructed our first worm drive truck and at that time we adopted self-aligning ball bearings for the center bearing of our main shaft, which is in two parts, because we found it very expensive and difficult to provide for the various misalignments caused by road and load conditions.”

W. G. Wall—National Motor Vehicle Co.—“We are at present using ball bear-



Full Floating Rear Axle Assembly of Scripps-Booth.

received were arranged to answer the following questions:

1. Where are ball bearings used?
2. Why are ball bearings used in the places mentioned?
3. How should ball bearings be lubricated?
4. How should ball bearings be mounted

A. L. Riker—Locomobile Company.—“Ball bearings are used on fans, clutches, transmission, universal joints in touring cars, rear axles and rear wheels.”

C. W. McKinley—Willys-Overland Company.—“We have used ball bearings in transmission and rear wheels.”

Russell Huff—Dodge Bros. Motor Car

ings in our transmission, clutch, and a couple of small bearings on the engine and believe thoroughly in using them in all the accessories."

*C. Biedermann—O. Armleder Company.*—"We are using ball bearings in the fan, clutch throwout collar, clutch pilot bearing, and jackshaft third member, for the reason that they are particularly adapted for this express purpose."

*T. P. Chase—King Motor Car Company.*—"We have used ball bearings

wheels when full floating axles are used, and the main bearings of the transmission."

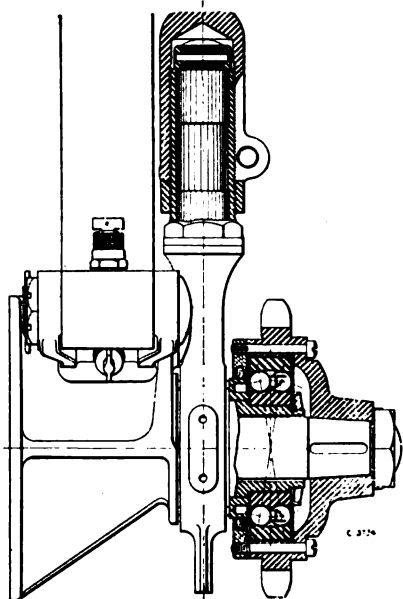
*E. Planche—Dort Motor Car Co.*—"When ball bearings are used properly they always give satisfaction."

## No. 2 Why Ball Bearings Are Used in Places Mentioned

*A. L. Riker—Locomotive Co.*—"Ball bearings are used—

that the annular ball bearing is the ideal one for use where there is no great amount of thrust, but where there is an extreme amount of thrust we resort to the thrust ball bearing."

*C. Biedermann—O. Armleder Co.*—"Ball bearings are self-contained as a unit, not depending upon another bearing to obtain stability. We use ball bearings for the reason that they are readily assembled, nearly frictionless, require a small amount



Jack-shaft arrangement as used on the Peerless Motor Car Company's trucks. The aligning feature of ball bearings is especially desirable in this construction by reason of the fact that in service, if there is any deflection, the self-aligning ball bearing compensates for same. Also, the weaving of the chassis in service makes the use of self-aligning ball bearings especially desirable.

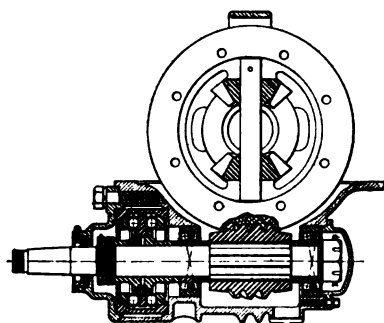
throughout on rear axle, pinion, shaft, front wheels and clutch on our car, with very good success."

*B. B. Bachmann—Autocar Company.*—"We use ball bearings on the crankshaft of our motor."

*J. V. Whitbeck—Chandler Motor Car Company.*—"We have always used ball bearings throughout in our transmission and rear axle, for the reason that we have believed them to be best fitted for these positions and have enabled us to transmit a maximum amount of power from motor to road wheels."

*C. H. Fox—Ahrens Fox Fire Engine Co.*—"Ball bearings have always been identified with our motor fire engines and we have always found them very satisfactory. We are using these bearings for our jackshaft and also for the driving mechanism of our piston type fire pumps. We consider the bearings, (self-aligning) especially effective for this purpose because they are well adapted to the 'whipping' load to which these parts are subjected."

*L. A. Sommer—Allen Motor Car Co.*—"Ball bearings are of inestimable value in our automobiles, especially in the rear



Worm Drive differential carriers.

- To reduce friction.
- Less space required for installation.
- Do not require constant attention when properly installed and protected from dirt, etc."

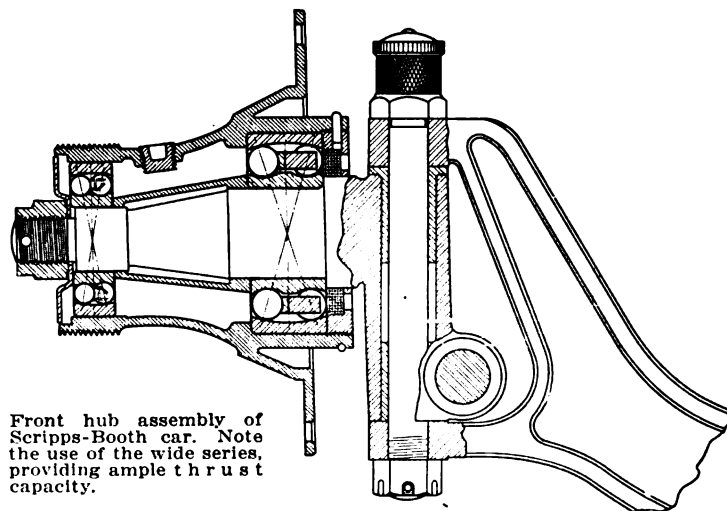
*C. W. McKinley—Willys-Overland Co.*—"The principal reason for using ball bearings has been their great load capacity for the small space which they require.

- For their anti-friction qualities.
- Because of their accuracy, which

of oil and will take such thrust loads in addition to the radial load as is found in these various applications."

*T. P. Chase—King Motor Car Co.*—"We have used ball bearings for three reasons:

- A car mounted on ball bearings will roll easier and, therefore, absorb less power.
- Ball bearings can be made of sufficient capacity to take care of the thrust as well as the radial load, when neces-



Front hub assembly of Scripps-Booth car. Note the use of the wide series, providing ample thrust capacity.

allows us to secure full benefit and painstaking work on the balance of the parts going into the transmission.

- Because of their easy assembly."

*Russell Huff—Dodge Bros. Motor Car Co.*—"The reason why we use annular bearings is because of their greater accuracy in regard to concentricity and because of their unit construction, making them more practical because of their taking both radial and thrust loads."

*W. G. Hall—National Motor Vehicle Co.*—"We have always been firm believers in the use of ball bearings. We think

sary, without providing extra thrust bearings."

*B. B. Bachmann—Autocar Company.*—"The reason we use ball bearings is because in our horizontal two cylinder engine it is extremely difficult, if not practically impossible to design a construction which will allow for an adjustable bearing. Therefore, in casting about for a bearing which would give satisfactory service under these conditions, we adopted the annular bearings."

*L. A. Sommer—Allen Motor Car Co.*—"If a ball bearing is properly designed

and large enough for the load, and made of the best material, it will stand up and do its work with as little or less trouble in the long run as any other type bearing.

"A ball bearing can be made narrow without decreasing its capacity or efficiency. A ball bearing is also capable of carrying quite a degree of thrust load as well as radial load.

"Another obvious advantage of a ball bearing is the uniformity of wear. A ball bearing revolves in every direction and, therefore, wears its entire surface evenly, which assists in keeping the load carried by the ball bearing uniform throughout many years of wear."

*W. R. Strickland—Peerless Motor Car Co.*—"Ball bearings have such a great advantage in the reduction of space required for bearings, and consequently wear, that there is no longer any question about their use where rolling weights are considered."

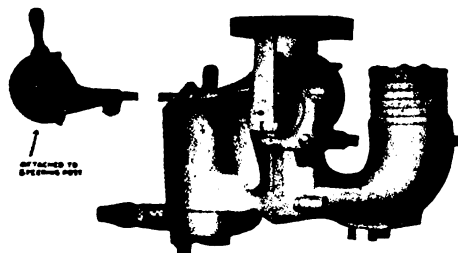
*W. P. Chrysler—Buick Motor Co.*—"Ball bearings are being used because we have found them to be quiet, efficient and economical. The duplex action (radial and thrust capacity) of a properly designed and well made bearing permits of its being used in many places to perform the work of several bearings in combination, provided the amount of thrust present with radial load, or vice versa, is in keeping with the capacity of the bearing.

"It takes up less space than combinations of other types of bearings and in additions to its simplifying construction, economizing of space and material, time and labor of assembly, it obviates complicated adjusting devices, which when in the hands of unskilled workmen, may be manipulated in such a way as will produce results detrimental to the vital parts of the equipment."

(Second and final installment will appear in our December number.)

### How to Save Fuel Told by the Master.

To the end that the general public-motorist and layman may have an accurate and at the same time comprehensive knowledge of the adjustment of carburetors, the Master Carburetor Corporation,



1200 W. Fort St., Detroit, Mich., is issuing a booklet prepared by Raymond M. Anderson, the foremost carburetion engineer in America. The free booklet tells in terms readily understood how a car may run economically and get the best service out of the engine. This booklet is free to all and will be sent upon request.

# Substitute for Gasoline

## Report of Committee of Experts to I. O. M. A. Meeting

The eighth annual convention of the Independent Oil Men's Association, held last month in Chicago, was full of interest to garage owners and auto dealers.

Lack of space is the sole reason for the non-publication of at least a dozen addresses. The one delivered by M. J. Byrne on "The Work Being Done by the Gasoline Relief Committee" is of peculiar interest to readers of AMERICAN GARAGE AND AUTO DEALER. In the main, it was as follows:

At the Zone conference which was held in New York city in April of this year the presiding officer was authorized to raise a committee to be designated and known as "The Gasoline Relief Committee." The purpose of that appointment, it was then made clear, was to try and, if possible, ascertain some means of making gasoline more plentiful, or of providing a substitute for it, or furnishing some appliance or processes by which some substitute might be used to accomplish the same purpose as gasoline. The general committee had a later meeting, however, holding a meeting immediately upon the adjournment of the conference, which they were pleased to call a committee of experts, and to constitute that committee they went outside of the pale of the organization for two of its members, one of whom is Professor Lucke, the head of the engineering department of Columbia University, a very capable and worthy gentleman. With him was appointed Professor Metzger, of the engineering department of the Columbia University, and these two, with your humble servant, made up the so-called committee of experts.

We have endeavored by advertising in oil trade and other journals to enlist the interest of inventors and manufacturers in our research to the end that all known devices might be brought to our attention, and at the same time lend stimulus to others whose dormant plans may by encouragement be brought to fruition. It is not our purpose to criticize any scheme, but rather to report the result of our findings with such recommendations as these may seem to warrant. It is our opinion that for the time being at least kerosene offers the most hopeful source of fuel supply for motor use, and its application in principle therefore is among

the very serious problems confronting the engineering experts of the time. From many which we have had under consideration none other has seemed to offer so much encouragement to hope as has the invention of Mr. John Good, of Brooklyn, N. Y., and a device owned by the Holley Brothers Company, of Detroit, Mich., and these we feel merit, and should receive, our recommendation as well worth encouragement and support. The latter company is not interested in individual sales, nor are they prepared to take individual orders, but prefer to sell their product in quantities to manufacturers. The Good invention, on the contrary, is available to those who may apply. Mr. Good is not interested to the extent of desiring to promote the commercial purchase and sale of his patent. He might co-operate with any one desiring to make use of it as a producer of kerosene appliances under his patents or to alter existing gasoline automobiles and boats to operate on kerosene. We have information that many automobile manufacturers are experimenting with these and other schemes; their interest has been aroused, and pretty general adoption of kerosene equipment will follow as fast as the encouragement and assistance of related interests warrant.

We think it not impracticable for this Association to help the user of one of these schemes directly by inducing garage men and repair shop people to convert existing machines by applying either or both of the above systems instead of requiring owners to buy new machines for the purpose—this would take too much time.

We therefore recommend that the Association authorize and empower the Board of Directors to take such action as to them in the exercise of a sound discretion may seem wise, looking to the appointment in each large city of a repair man or garage owner who will agree to take up this idea, and, if need be, to back such enterprise financially. We think there is an immediate—in fact, an urgent—demand for some such action.

We also recommend that this committee be continued, so that other schemes may be examined, and the satisfactory ones added to an "approved" list as they are found. Respectfully submitted,

CHARLES E. LUCKE,  
M. J. BYRNE,  
The Gasoline Committee.

### A New Ohio Garage.

The McClure Tire & Rubber Co., Columbus, O., write:

"We expect to have one of the most up to date garages in Ohio. In connection with the garage we will have a tire sales room and a large auto repair shop. We will also carry some automobile accessories. We will have several cars to answer any calls within the city limits, and a car for country work, too. The garage will have a complete auto laundry. Our new building is not yet complete, but will be very soon."

B. A. McClure will report on the

success of his new venture with its new features later on.

### One of Our Collection Letters

The University Garage, Madison, Wis., reports the collection of one of its bad accounts in full, amount \$47.37, on the receipt by the debtor of the first of the A. A. G. O. Collection Service letters.

We have received payment from Mr. Joe B——, (\$25.00) and herewith thank you for your collecting service.—Steffes & Steffes, Chilton, Wis.

Many A. A. G. O. members are using this service. Why not you?



# Elgin Six as Pilot

## Leads in 800 Mile Pike Tour—An Endurance Feat

A few weeks ago, a large group of duster-clad tourists of the West Michigan Pike Association finished their fifth annual tour from Chicago to Mackinaw City, Mich., a distance of 800 miles. The Elgin Motor Car Corporation, Chicago, motor car manufacturers, were much elated upon receiving the news that Elgin Six was to receive the honor to act as pilot car for the tour.

The long procession of cars was led by a five-passenger Elgin Six touring

owner of an automobile in Grand Haven turned out to demonstrate their good will toward those in the Pike Tour who were doing so much for the promotion of good roads in Michigan. When they reached Grand Rapids the procession was joined by several motor enthusiasts and good-road boosters of that city.

Almost every manufacturer of cars of the more expensive types were represented. Elgin Six was the only car

of gas and 150 miles per pint of oil, for the entire run.

Upon arrival at Mackinaw City, the populace turned out to greet the motorists. A shaft was dedicated, marking the apex of the Dixey Highway with the western Michigan and eastern Michigan Pikes forming the northernmost link of the system of good roads, leading from the Lake Straits to the Atlantic Ocean and the Gulf of Mexico.



The Way It Plows Through the Sand.

The shaft was composed of boulders brought from almost every state in the Union and Alaska. At the dedication of the boulder landmark Miss Rayma Smith, daughter of Representative S. J. Smith, unbound the great flag draped about the shaft.



The Arrival at Mackinac City.

car which was driven by G. A. Brinkman, service manager of the corporation. In the car with him, were John I. Gibson, grand marshal of the Pike Tour; S. F. Nielson, Michigan state highway engineer, bugler; Tom Carson, and the much abused moving picture man, LaVern Dumont. Immediately following the pilot car was an Elgin Six, three-passenger Clover Leaf Roadster, driven by C. F. Jamison, assistant general manager of the Elgin corporation. With Mr. Jamison was his wife and Miss Mabel F. Gillian. The Elgin corporation also furnished two other automobiles for the tourists who wished to accompany the popular expedition.

As the long caravan passed through many beautiful towns of southern and western Michigan, they received a most cordial reception. Upon arrival of the mud besmeared gas schooners at Grand Haven, they were greeted by a local committee who carried through a well-planned demonstration of welcoming the tourists to their city. Every

represented selling under \$1,000. Its excellent performance was the subject of much favorable comment. On this trip the mechanism of Elgin Six was put to a real gruelling test and it emerged at the finish with a perfect score. Not a single adjustment or replacement was made throughout the entire run. During the entire trip the motors of the Elgin cars never faltered and maintained an average speed of 40 miles per hour.

Much of the trip was through deep sands, but the car that is "Built Like a Watch" vigorously plowed through with no indisposition to do its duty. Many grades were over six per cent, some of them being fully two miles in length. Whenever a stretch of level road was reached the pilot car, with its long stream of trailers, averaged from 55 to 60 miles per hour.

A careful record was kept of the gas and oil consumption of all Elgin cars in the tour and it was found that they averaged 23½ miles per gallon

### A \$12,000,000 Studebaker Sale

Some sale! The newly-formed Studebaker Sales Co. of Toledo, O., was the buyer and the parent corporation the seller. The signature of L. J. Ollier, vice-president and director of sales of the Studebaker Corporation, completed what was the biggest contract for automobiles in the history of the industry. The Toledo concern is a combination of the Blevins Auto Sales Company of Toledo and Cincinnati, and the A. R. Davis Motor Company of Cleveland.

Mr. Ollier is well known in Chicago, where he was one of the first automobile dealers. He later went to Los Angeles, and on the strength of the record he made there was called to the post of sales manager of the Studebaker Corporation two years ago. In less than a year he was advanced to the title of director of sales, and was also made a vice-president.

Under Mr. Ollier's leadership Studebaker sales increased from 37,000 to 75,000 cars in a year, making him one of the industry's top-notchers.

J. C. Ferguson & Sons, Pawhuska, Ok., are adding 50x100 brick building to their garage and salesroom. They carry Ford, Hudson, Buick and Dodge cars.

# Steel Mule Ousts Old Dobbin

**A Low-Priced Tractor Unlike the Others—  
Has the Caterpillar Crawl—Plows, Cultivates,  
Spreads Manure, Etc.—Doesn't Kick or Balk**

The increasing number of tractors in use throughout the country is a revelation, when one stops to consider that only a very few years ago the idea of having a gasoline engine plowing the land, seeding, gathering the crop, and hauling it to the market, was laughed at, and considered only a wild dream of an over-enthusiastic inventor.

If one were fortunate to be at one of

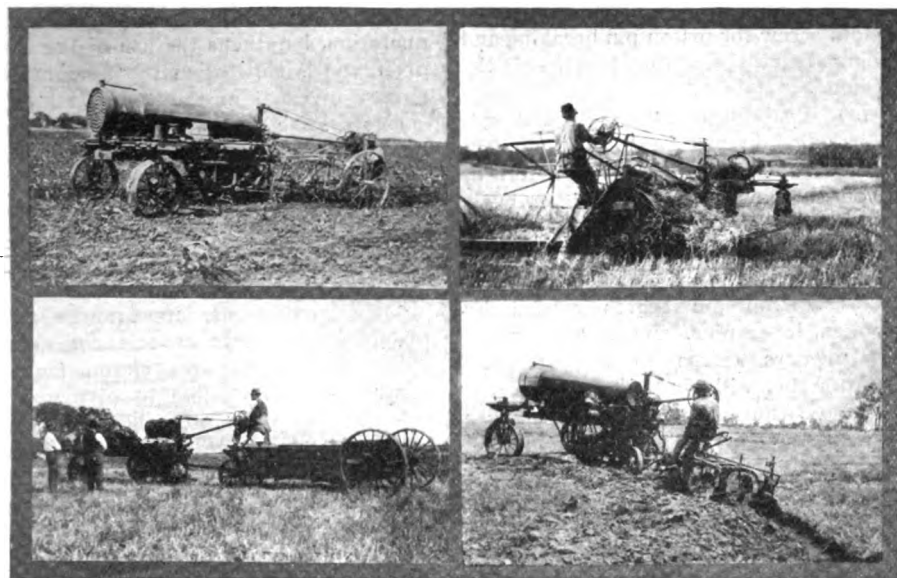
to the draw-bar and controls the tractor from the seat of the implement. In the case of wagons, manure spreaders, etc., a short tongue is used, of such length that the seat would be the proper distance back of the control wheels. On other implements a clevis or chain hitch is used. No expensive attachments are necessary to connect any horse-drawn implements to the

When plowing, one wheel runs in the furrow and is dropped at a lower plane than the other wheel so the machine will remain level. This furrow wheel guides the machine so that the operator can give his full attention to the plow.

It is very easy to steer. Just a slight effort on the steering wheel makes the machine quickly respond in either direction. This is not only true for plowing, but is equally true for harvesting grain, drilling, cultivating corn, mowing, discing, etc. In using the machine as a portable engine for belt work, the transmission gears are put into a neutral position, thereby disconnecting the driving mechanism from the crawler, and then the pulley is stopped or started with the same clutch that is used for the tractor.

The Bates Steel Mule has a draw-bar pull on its plowing speed ( $2\frac{1}{4}$  miles per hour), of over 3,200 pounds. This gives reserve power enough to pull three plows in any kind of soil at a good speed. You will notice that this machine has a crawler for propelling instead of a "wheel," which is another big feature. This, by the way, is the type of tractor used in the European war on "tanks" for moving big guns over trenches, craters and all conditions of ground.

The high price of gasoline did not affect the cost of operating the Steel Mule. It is equipped with a specially



the huge tractor demonstrations held this summer, where in the same field one hundred different types of farm tractors were at work plowing, being closely followed by thousands of farmers, it would fully convince you that the tractor business is on a solid, economical foundation and the field for "selling" unlimited.

On this page we show four photographs of one of the most popular of the modern type of traction engine. On account of its unique construction it makes it possible to replace horses, not only for plowing, but every other operation on the farm. It has required the output of one of the largest tractor manufacturers in the country to take care of the demand for this machine and, judging from the enthusiastic reports of users, all over, it is destined to attain still greater leadership.

In the operation of Bates' Steel Mule, which is the well titled name of this "never-tiring" animal, the operator simply hitches any horse-drawn implement

Steel Mule. It is as simple to run as a machine can possibly be.

The control of the tractor is by means of three wheels and a lever on the end of the long column, which consists of three lengths of tubing, one inside of the other. The tractor being connected with the column through a universal joint. The steering column can be swung to any position desired, at the will of the operator. The middle wheel is the steering wheel. The wheel in front of the steering wheel operates the clutch and the smaller wheel in the rear operates the gear shifting apparatus. The carburetor control is in the form of a lever projecting in front of the clutch wheel.

All the mechanism is very simple and extremely durable and practical. The operator drives this machine in front of him in the same manner as he would a team of horses and inasmuch as he sits on the seat of the implement where he can watch the operation of the implement itself, he can easily manage both implement and tractor alone.

## The Tractor

George Fitch.

The tractor on the farm arose  
Before the dawn at four;  
It drove up cows and washed the clothes,  
And finished every chore.  
Then forth it went, into the field,  
Just at the break of day;  
It reaped and threshed the golden yield,  
And hauled it all away.

It plowed the field that afternoon,  
And when the job was through,  
It hummed a pleasant little tune  
And churned the butter, too.  
And pumped the water for the stock,  
And ground a crib of corn,  
And hauled the baby round the block,  
To still its cries forlorn.

Thus ran the busy hours away,  
By many a labor blest;  
And yet, when fell the twilight gray  
The tractor had no rest.  
For, while the farmer, peaceful eyed,  
Read by the Tungsten's glow,  
The patient tractor stood outside  
And ran the dynamo.

designed kerosene burning, valve-in-head motor. This highly efficient kerosene motor is only part of the general policy of the people behind it to make the Steel Mule the most up-to-date and economical machine of its kind built.

By dropping a postal card to the Joliet Oil Tractor Co., Joliet, Ill., and mentioning AMERICAN GARAGE AND AUTO DEALER complete illustrated details describing this interesting invention will be gladly sent you on special arrangement made with the editor.

# Cylinder Regrinding

## What the Indications Call For— Worth While Information

By Ralph H. Ratliff

### Motors Which Need Regrinding and New Pistons Have the Following Indications When in Operation:

(1) Loss of power, pick-up, speed and life.

(2) Excessive use of oil resulting in pitted and dirty valves which require frequent grinding. Carbon collects under them and on the stem, allowing the gas to leak past, causing the motor to heat. Carbon has to be burnt out frequently. Spark plugs foul, cylinders miss firing as a result.

(Note—Valve trouble is frequently due to improper designing of the valve guides and bushings. Also improper firing of the motor with above conditions is sometimes attributed to faulty ignition. It is best for the repairman to examine motor very carefully with motors having the above conditions.)

(3) Excessive use of gasoline. Sometimes impossible to secure an adjustment on the carburetor for any length of time for all motor speeds.

(4) Loose piston, causing slight slap.

(Note—This refers to cast iron pistons.)

(5) General unsatisfactory running conditions, a noisy and inefficient motor, which usually gives disappointment instead of satisfactory service.

### Motors Which Need Regrinding and New Pistons Have the Following Indications When Disassembled:

(1) Motors which have seen extensive service and the cylinder walls are highly polished and to the naked eye show no effect of wear give the story away when the bottom of the stroke as marked by the rings can be felt, and the pistons show dark streaks where oil and gas leak by. Cylinders wear out of round and get larger at the top than the bottom.

(2) Lack of proper lubrication results in dry scores both on pistons and cylinder walls. This type of score is readily seen and is very common, being denoted by scratches on the walls and the pistons.

(3) Scores at the top and bottom of pin stroke are caused by the end of the retain screw for piston pin breaking and being carried by the travel of the piston.

(4) Pistons are scratched, and cylinders also, by broken rings. Cylinders are worn by rings which are not of good bearing metal. In two-cycle motors, when they show wear at the exhaust ports due to improper installing of rings.

(5) Piston pin scores caused by broken, loose pins. As long as motor car owners refuse to inspect their motors this will occur.

(6) Carburetors whose air intakes are so situated that they draw in road dirt which has a lapping effect and will eat out the cylinder walls very rapidly. The rings get sloppy in the grooves and loose. This wear is often indicated by very fine lines of both pistons and cylinder walls. The finding of dirt in the bottom of the crankcase is an indication of this taking of dirt through the carburetor.

(7) Pistons assembled out of line will wear opposite side and bottom of piston and cylinder.

(8) Cylinders which have been welded should be measured with the micrometers to determine whether they have warped in cooling. If this is excessive there is but one remedy for a satisfactory job, namely, to regrind or get new pistons.

### Results of Regrinding Cylinders and New Pistons:

(1) Gives the motor a new lease of life, restores the compression, gives pick-up and speed. Stops oil from fouling spark plugs, the new fit and close clearance lessens carbon, valves require less attention. Gas does not leak past the cylinders, takes less gasoline. Allows for carburetor adjustment and proper ignition.

(2) Saves the car owner money for the upkeep and operation. Gives better service for the cylinders, are close fitting, for the iron in the cylinders has

seasoned and now remains in a more permanent position. It saves the car owner time, for he does not have to give up the use of his car to the repairman as before. One time for a few days is sufficient for a length of time.

(3) The repairman has a nice, neat profit from the regrinding, also the labor profit, stock and material from the rebuilding of the motor. He has a satisfied customer, and it will not be necessary for him to donate his time in an effort to make adjustments as is very frequently the case when piecemeal work is done, and when the motor has the troubles as indicated in the first section of this article. The tendency of automobile owners is to claim the repairman always left something undone and want work for nothing.

(4) The car owner cuts his cost of operation, lengthens the use of the car, or if you wish, lowers the amount of money invested in the car.

(Note—The present prices of second hand cars will not advance, it would seem, and there are hundreds of cars being purchased by people who will feel they are not financially able to purchase another car in a short time.)

### Concluding Remarks

These indications, appearances and results are given to cover the general field. Conditions and circumstances vary. It is impossible to give a set rule for every motor built. Even motors of the same make and model will have different conditions. In the end this outline should assist the car owner and garage man to draw his own conclusions for the particular job.

The above is the result of Mr. Chas. R. Butler's (Butler Mfg. Co.) experience covering 20 years, and the credit is due him for this information.

I considered it best to supply this only in outline form as it is absolutely impossible to give on paper the conditions which will cover every motor. Motor doctoring is very much as human doctoring; it is individual.

### Tractor Business Demands Attention of Garagemen

No garage owner with a repair department and no auto dealer can afford to ignore the enormous development in tractor sales.

The country and small town garages in agricultural districts are the main ones interested, but the busiest city garage often is called upon for repairs or information on tractors. There are at present approximately a hundred factories turning out tractors. The specifications are more varied than in a corresponding number of makes of automobiles.

Such information is at hand in a list furnished on application by AMERICAN GARAGE AND AUTO DEALER.

# Fully Equipped Denmo Truck

**New One and One-Quarter Ton Truck Announced  
to Sell for \$1,385—Complete Chassis Equipment  
Included — Features and Details of Interest**

Following over a year of experimental work and road tests that have extended over thousands of miles, the Denneen Motor Company of Cleveland, O., announce the Denmo Model 10, 1¼-ton truck, as the first of the Denneen

system is furnished as standard equipment. Through the use of a specially constructed spring cushion battery cradle, all of the objections that have hitherto prevented its use for trucks are said to have been overcome. This

cation on the piston sides, but the oil does not get up over the top of the piston to cause smoking, pitting of the valves or sooting up of the spark plugs.

Denmo trucks have actually been driven 8,000 miles without cleaning the spark plugs or grinding a valve, is another important statement made by the Denmo people.

The upper half of the crank case is made from a single aluminum alloy casting. It is well ribbed and supported. Crank shaft bearings are supported by heavy webs extending through the entire depth of the crank case.

Transmission is of selective sliding gear type. Three speeds forward and one reverse and is carried as a unit with the motor. All bearings are of the annular ball type carefully mounted. Gears and shafts are made of nickel steel, properly machined, hardened and ground.

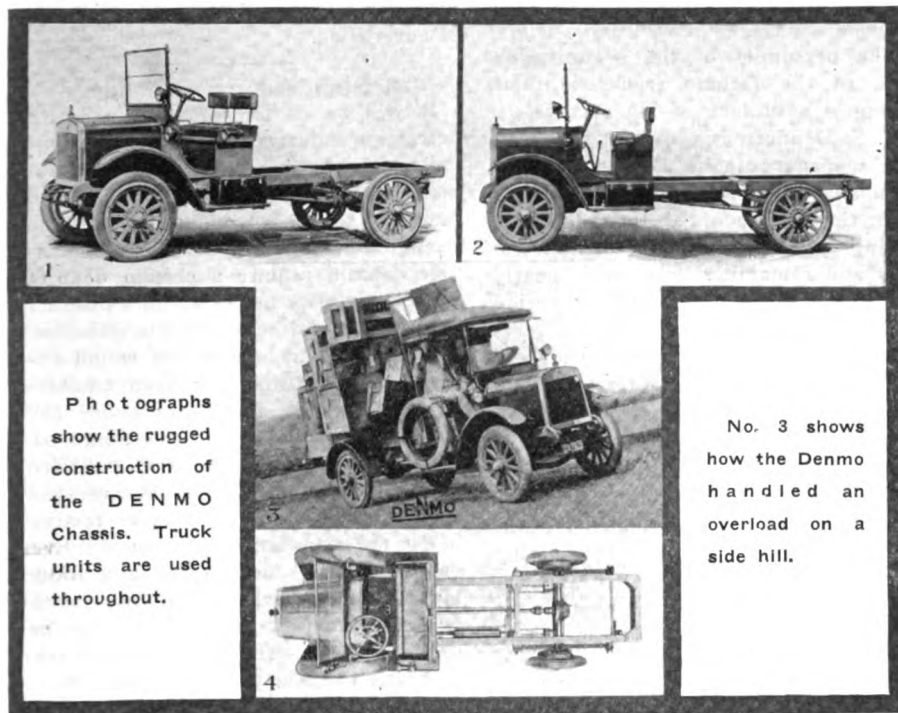
A Fedders cellular type thermosiphon radiator is used. The radiator has a large cooling surface and a fan mounted on adjustable ball bearings assures sufficient current of air to keep the radiator cool under all conditions.

The radiator is carried on a cushion spring suspension to eliminate severe shocks and vibrations. A common practice has been to suspend the radiator from its corners on some sort of spring mounting. Some manufacturers have found this objectionable, because when the radiator is allowed to move vertically there is a tendency for the core and the tanks to sag and break down at the center every time the radiator gets a severe shock. This develops leaks no matter how carefully the core may be constructed, and, to obviate this trouble, it has been found necessary to put a bridge construction across the radiator bottom.

The Denmo radiator is suspended on a very strong steel angle bar, which in turn is suspended on springs at each end. The radiator has full bearing on the angle bar across its entire width. This permits the use of simple, light, efficient radiator and at the same time gives the truck owner a guarantee against the usual radiator leaks.

## Internal Gear Drive Is Used

The rear axle is of the Torbensen Internal Gear Drive type. In this axle the load is carried on a solid forged I-beam section, while the power is



Motor Company products to be placed on the market.

These trucks have been given thorough tests through the roughest roads, the steepest hills, the deepest mud in the country, and their performance record during all of these tests has never been eclipsed by any truck, regardless of price.

The units entering into the construction of Denmo trucks reflect the combined experience of men who have been responsible for many of the greatest successes in both the pleasure and commercial car fields.

While the design of the new truck is conventional, the construction has been simplified to a remarkable degree and dependable day after day service is assured with a minimum expense for operation, maintenance and repair.

As an instance of the many features included in the new Denmo, the furnishing of electric starting and lighting equipment may be cited. A Splitdorf-Apple two-unit starting and lighting

battery cradle is being covered by patents. The Denmo battery actually receives less vibration and fewer shocks than the battery on a pleasure car, is the startling claim of this company of

## The Denmo Chassis

Going into the details of construction of this new truck, it is found that a Wisconsin truck motor of special design is used. It is a 4-cylinder motor cast en bloc, 3¾-inch bore, 5-inch stroke.

Lubrication is absolutely force feed, no splash being provided for the rod ends. This insures correct distribution of oil to all of the bearing surfaces, regardless of the grade or angle at which the motor is worked. It means that every part of the motor is thoroughly lubricated, regardless of load or other conditions. The importance of this feature in commercial car design cannot be over-estimated.

The lubrication system is so designed that the motor gets just enough lubri-

transmitted to the wheels through a separate jack shaft member. All the drive parts are fully enclosed and ample lubrication is provided.

The brakes are of the internal expanding and external contracting type. The service brake is equipped with an equalizer insuring the same braking action on both wheels. Brake drums are made of pressed steel 15 inches in diameter. Brake bands are 2 inches wide.

The frame is  $\frac{3}{4}$ -inch pressed steel channel section, 5 inches deep. The flanges vary from 2 inches wide at the minimum load point to 4 inches wide at the maximum load point. Extra length semi-elliptic Vanadium steel springs are used on both front and rear.

The steering gear is of the Lavine truck type worm and nut construction. Borg & Beck Dry plate disc clutch is used.

The carbureter is a special Stewart. Provision is made for an abundant supply of heat to insure satisfaction and economical performance with the heavy fuel, now the only fuel in most localities. Twenty-gallon gravity feed gasoline tank is located under driver's seat.

Denmo trucks are equipped with transmission driven Pierce centrifugal type governor. With the usual method of governor installation, the governor action is dependent upon the motor speed, so that the total power of the motor cannot be used for low gear work, such as sharp hill climbing or ploughing through heavy roads.

On this new truck the governor is driven from the propeller shaft, so that it goes into action only after the truck has reached the speed for which the governor is set. The factory setting is 20 miles per hour. In other words, the Denmo governor is so arranged that it does not affect the performance of the truck or limit its ability to work in any respect until the speed of the truck reaches the point for which the governor is set. This leaves the operator free to work the truck to its maximum capacity and prevents his running it at reckless speeds. The governor is sealed so that the operator cannot tamper with it without the owner being able to detect it upon examination of the seals.

Wheel base is 124 inches. The truck has a 21-foot turning radius. There is 9 feet of loading space from the back of the driver's seat to the end of the frame.

Standard equipment includes Splitdorf-Apple, two unit starting and lighting system, spotlight, rain vision windshield, dash and instrument board assembly, tool kit, Stewart speedometer, Motometer, tail lamp, electric front

**ANNUAL CONVENTION**

**A. A. G. O.**

The Dealer and Service Organization of the Automobile Trade

**AUDITORIUM HOTEL**

**Chicago, Illinois, Feb. 1 and 2**

**During the Chicago Automobile Show**

Every Auto Dealer, Garageman, Repairman and  
☐ ☐ ☐ Serviceman should attend. ☐ ☐ ☐

lamps, license bracket, front fenders, spare rim, tire pump, Dixie high tension truck magneto, bumper and mechanical hand horn.

The weight of the complete chassis is 3,050 pounds and the price is \$1,385 f. o. b. Cleveland.

#### "The Men Behind"

The personnel of the organization back of the Denmo trucks is their strongest assurance of big success.

F. S. Denneen is president and general manager of the Denneen Motor Company. He was formerly associated with the Chalmers Motor Company, having joined that organization in 1909 and remaining with them nearly five years, during all of which period he held executive positions in the service, engineering and manufacturing departments. For three years he held the position of engineer of works.

Previous to his connection with the automobile industry, Mr. Denneen had a broad experience and high reputation in electrical engineering fields. He was well known in railway engineering circles, because particularly of his engineering work in connection with the electrification of several of the principal steam roads. One particularly noteworthy piece of work with which he was connected was the electrification of the Great Northern Railway Company through the Cascade tunnel and Cascade mountains. Mr. Denneen was the designing engineer for that entire overhead system.

C. A. Denneen is secretary and treasurer. While Mr. Denneen is heavily interested in many enterprises, he is most widely known through his work in railway and municipal contracting. In 1908, with Jno. B. Carter, he organized the Jno. B. Carter Company, today one of the largest construction companies in America. When the company was organized he became vice-president, which position he still holds. In 1914, Mr. Denneen and two associates contracted with the city of St. Louis to build a tunnel four miles long and twenty feet in diameter through solid rock under the city. This job was completed April 1, 1916, eight months ahead of the contract time. These men did not receive any financial returns from this big job until after completing the work; the contract price was in excess of \$3,500,000.

C. N. Mitchell is chief engineer and is well known in both the pleasure car and commercial car fields, having served in engineering capacities with the Oakland, Lozier and General Motors Companies. Mr. Mitchell had much to do with the designing and introduction of the first Chandler motor car.

E. W. Corman, sales and advertising manager, has been identified with the motor car industry for the past several years. Mr. Corman was one of the original Saxon organization. He became connected with that company in the capacity of assistant to sales manager and was later made director of advertising.

#### A Standard for Gasoline.

It will be of interest to the entire petroleum industry, and to the consumers of gasoline as well as the middlemen, such as garagemen, dealers and handlers, that a reasonable standard be fixed. A standard to be fair and equitable, should require a certain definite degree of purity below which a product may not go and be branded as gasoline. The rule should be one that would exclude gasoline that has been adulterated, permitting all grades above the specified test of purity to be admitted. Goods that test above the standard should command a premium over the regular price, while a product testing below the standard should not bear the gasoline brand without qualification, but should be marked 95 per cent pure, or whatever the degree of purity the product shows. There is considerable fear that the test will be made so high that it will do honest refiners an injustice. This should be avoided.

#### Are We Progressive?

There is a woefully mistaken idea among some of our non-progressive brethren that anything designed to save the motorist money, time or trouble is a direct detriment to the garage business. This view is terribly short-sighted, and the garage man who hopes to build a sound business structure must at all times do everything in his power to make motoring a joy and doing business with him in particular a keen delight for every patron.

Imagine an up-to-date garage man refusing to participate in the "Good roads" movement under the mistaken idea that good roads cause fewer breakdowns and therefore less repair work for the garage, or refusing to handle or recommend any of the numerous gas-saving devices because they may have a tendency to reduce the sale of gasoline, or a practical and proven carbon remover on the ground of having fewer valves to grind, or any of a hundred other articles offered for sale now.



# Random Reflections

## by Field Director C.F. Marcher

In all the affairs of the world's history it is the one who stands apart from the crowd who proves to be the leader.

The "open season" for legislatures will soon be upon us and if we of this industry expect to accomplish any lien law legislation, we must soon be "up and doing." In the writer's opinion it is only a question of choosing a correct method of procedure in order to accomplish all that we desire.

It's the hard-hitting joyous scrapper who ofteneast makes good.

I want to say right here that the correct method is not to wait until the different legislative bodies convene and then send a big committee with a great "hurrah" and pockets full of money to the state capitals in an effort to interest state senators and representatives in a law which seems to be so remote to their interests that it will receive scant attention.

Men who work like machines can't work as well as machines or as cheaply.

There are only two powerful influences to which these men are subject: One is exercised upon them by the opinion of their own district, the other by the needs of their party. They can be made to do something because of party necessity or because of district sentiment.

If you employ a man, don't suspect him. If you suspect a man, don't employ him.

If this premise is correct, and there will be found few who will question it, then the obvious thing to do is for us one and all to make the small amount of effort necessary to impress upon our local district representatives the importance—the immense importance of this legislation to our business.

If you think that mere industry will suffice for success, then failure is stalking you.

This law is ours by right. It will work no injustice to any honest man. We are entitled to it and must have it. Inasmuch as it will have a great tendency to protect invested capital and elevate the morale of the garage business as a whole, let us "take off our coats" and make a whole-hearted, concerted effort along these lines.

Men who can produce are always worthy of their hire.

It will be well to keep fixed firmly in mind that to no committee can be delegated the duty of accomplishing this purpose. We must each one separately and individually do our part. That duty consists solely and simply in forcing the conviction on senators and representatives that unless they are for this law they need expect no support from us.

That phrase, "The even tenor of his way," always conjures before one the image of a fellow who never heard the word "ambition."

Conceding the above remarks to be true, what are we going to do about it? Why, each one of us, members of this association and all others eligible to membership, should immediately get in touch with the secretary at National Headquarters and learn of the comprehensive plan for directing individual effort to the end of producing the desired result.

No matter how hard you aim to please, if your intention isn't translated into performance, nothing worth while results.

It's the rank and file who must do the work to force this bill through in all the states. It's all very well to talk of interesting this and that "big" political "boss" and he will snap his fingers and, lo and behold, there's the thing already done. Don't you believe it—that line of talk is all bunk.

Progress depends less and less upon hand power. Wheels are no longer pulled. They're driven.

Why, that big boss stuff is the method that has been used in practically all of the state legislatures heretofore—and what's the result? You know without being told—we still have no lien law in any state except New Jersey, Michigan and New York (and the last two named need amending). And, besides, where is the money to interest the boss coming from?

It's confidence that wins the fight nine times out of ten. The battle belongs to the bravest.

Many interesting stories could be told

of the experiences of "committees" who make annual pilgrimages to different state capitals to "put it over" after having "reached" enough credulous ones with their subscription lists who are promised that this time it will go through sure—"We know just how to handle it now. If that 'other bunch' hadn't butted in trying to steal the credit, we would have landed it the last time."

All of us are greatly misunderstood—especially by ourselves.

Oh, you swell hotels and big feeds on the easy money. Brothers, it can't be done that way—let's not kid ourselves any longer, nor let others string us—we are the ones who must do this work, you and I and all the rest of us must do our little share. We must work on them while they are at home, among us, then they will vote right when the time comes.

Because things have been done a certain way for many years is often the best reason for making a change.

### Wipe Out the Pirate Parts Business.

It is hardly necessary to appeal to the conscientious dealer that he discourage, and try to prevent in every way possible, the further sale of pirate parts. At least, he will not be a party to it and sell these parts to his customers.

In fairness to themselves as well as to their patrons, dealers and garage-men should bend every effort to completely wipe out this pirate parts business.

Trades bodies and dealers' associations should, as a matter of self-preservation, take steps to not only discourage the sale of pirate parts, but also to reprimand its members who through ignorance are hurting themselves and the automobile business by selling pirate parts.

They should go even further and advocate the enactment of laws to prevent the manufacture and sale of substitute parts for standard accessories and automobiles.

Without considering the legality or justice of this practice of substitution, every possible means should be employed to stamp out this evil, chiefly for the protection of legitimate dealers and the unsuspecting motorists.

We would like to have dealers write us expressing their opinions and tell of their experiences with this pirate parts business. An exchange of ideas will bring out many unseen angles to this business. Extensive publicity should be given the evils of this pirate business and a complete exposure made of it.

# Mechanical and Engineering Problems

*THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by IRWIN D. GROAK, M. E., graduate of Hungarian Technical University of Budapest; patent attorney and consulting engineer for some of the largest engine and motor concerns in the United States. When shop information is desired, write Mr. Groak, care this office.*

## FUEL CONSUMPTION.

**Question.**—What does it mean that an automobile engine uses one gallon of gasoline for each ten miles run and in another make of car one gallon will last for twenty-five miles? Is it because the engine is more economical and the car is built better? How do you figure the fuel consumption on a gas engine? What is the fuel consumption on a stationary engine or on an automobile engine?

H. J. H.

**Answer.**—To describe fuel consumption by mileage is the easiest and best method known, as the automobile owner or driver after using the car can tell what he is up against.

However, the fuel consumption scientifically and practically should be determined by the horsepower and speed of the engine. An internal combustion engine of certain size will develop a pre-determined horsepower at a given speed. For instance, if the engine is designed to develop twenty-eight horsepower at 2000 r. p. m. at that speed, the fuel consumption should not exceed one-tenth of a gallon per brake horsepower per hour. Now if you run the engine still at 2000 r. p. m., but only use ten horsepower, the fuel consumption will be approximately six-tenths of a gallon per brake horsepower per hour.

If you change the speed with the load, you practically keep the engine at its best efficiency. The explanation for this is that a certain size of engine develops different horsepower proportionately with the speed. The stationary engine when running less than half load is not economical; on the auto engine, however, the economy, provided the carburetor is properly adjusted, is wonderful compared with a stationary engine. This is the reason why the so-called ninety horsepower engine (which means that the motor can develop ninety horsepower at a high speed, which is pre-determined by the designer) can be run economically when developing five horsepower. The answer to your question I hope will clear many doubts about engine horsepower.

If you have a strong engine, big enough to pull the car through mud and up hills, even if you throttle down to walking, the fuel consumption will be in proportion to the load the engine is to

pull. The economy of nearly all engines is fairly good.

The friction between the different moving parts and the weight of the car develops the fuel consumption of the motor per mileage. There is a certain amount of horsepower necessary to run the engine free; the smaller the engine, the less power it takes to turn it over; the heavier the moving parts and the larger the bore, the more fuel it takes for running it free. This has to be taken into consideration, and is one of the reasons that large, heavy cars with big engines use more gasoline fuel proportionately than the small, lighter cars.

The speed is also a factor. It is well known that it takes much more power to travel fast than slow and naturally much more fuel. This will explain why it is not economical to run a car above thirty-five miles an hour on high gear. Above this speed the car should be back geared.

\* \* \*

## CLEANING CARBON.

**Question.**—We had an argument the other day and we finally agreed to put the question up to you. Please give us your opinion whether burning out the carbon, or scraping it, is better for the engine.

T. E. S.

**Answer.**—A careful scraping is far superior to any burning process. The only disadvantage is that this work must be done very carefully. It is also expensive and takes time, while burning out by any method can be done in a very short time.

\* \* \*

## OIL IN TRANSMISSION.

**Question.**—Would you advise the use of oil mixed with transmission grease for winter use?

N. L. T.

**Answer.**—Yes. A little medium oil mixed into the transmission and differential box is advantageous in the winter and you can easily see the good results of this when starting the car on a cold morning.

\* \* \*

## PRIMING ENGINE.

**Question.**—What would you suggest for priming? Should the fluid be more volatile than gasoline?

L. S. W.

**Answer.**—Ether. Ordinary commercial ether is made of alcohol, very volatile and because it gasifies quickly it has a cleaning effect on the engine. It pays to put a few drops to every gallon of gasoline in the winter months. Good results can be obtained by putting fifteen or twenty drops to each gallon. When the engine is warm even the low-

est grade of gasoline will accelerate well, but when the car is standing still in the open cold air and you want to start up, we all know from experience how hard it is to make it run uniformly.

\* \* \*

## PAINTING TIRES.

**Question.**—What is the advantage of painting tires? Will it really preserve the life of the tire, or is it done only for the looks?

D. E. M.

**Answer.**—We have treated this question before in these pages. There is no necessity for painting new tires, in our opinion. However, when the tires become old or have been used about 3,000 miles, they should be washed carefully, wiped and dried, then given two or three initial coats of rubber paint. The paint should be applied to the tire once a week or at least twice a month, and in this way the rubber will be preserved for a longer mileage. The painted tires look very neat and clean, and they show attention, but the time and trouble occasioned by painting them does not pay enough for the saving.

\* \* \*

## DO BATTERIES FREEZE?

**Question.**—When laying up a car for the winter, what should be done to the battery? Can batteries freeze?

G. C. R.

**Answer.**—The freezing of a battery is not so dangerous as the sulphating of the plates. When putting away the battery, there are two methods. One is to discharge the battery completely and clean out the fluid of sulphuric acid and dry the plates. The other one is to flush the plates and give it a complete charge; every month charge again. Which is the better of the two methods can only be figured by knowing local conditions. The cleaning and drying out the plates after completely discharging the battery is safe, only when done by a battery expert, but the other way, by storing away the battery fully charged, one has to be careful to put it in a place where the weather will not be much below the freezing point.

\* \* \*

## AN ENGINE THAT FROZE UP.

**Question.**—I have used some oil from a barrel and one of my own cars happened to freeze in the down-town district. The piston would not move in the cylinders and the car had to be towed back to the garage. It cost us \$55 to repair it, and to put the car in serviceable condition; therefore, I made a claim to the oil company. They claimed that I had put molasses into the

crank case by mistake. I had no molasses in the garage, but insisted that the oil company was responsible for it, as I used the oil from the original barrel. Their chemist made analysis of the oil and also the oil in the crank case and around the piston where it froze. They found traces of sugar and they gave the explanation that the mucilage of the barrel mixed with the oil—and they paid the bill. I mention this as a very peculiar case. Really we did not know what to do to put the engine back in good condition and we had to overhaul the engine completely. What would you do in a case like this? I. N. C.

**Answer.**—This is really a peculiar case, but we know of instances when molasses got into the oil and turned it into sugar and the pistons stuck. In ordinary freezing—that means in case the engine runs without oil—let the engine stand for 15 or 20 minutes, remove the relief cocks and spark plugs, pour kerosene, then lubricating oil into the cylinders and start moving the fly wheel or crank. Do not use the starter. Look over the cylinders to ascertain whether they are scored and need regrinding and new piston rings; also see whether the bearings have burned. Oil should be kept in drums or cans and never in wooden barrels. Maybe it is all right for a few months, but it is not advisable to keep cylinder lubricating oil in wooden casks because the mucilage dissolves in oil in time and, through some chemical action, turns to sugar.

### Julian S. Patterson Recovering.

Julian S. Patterson, Manager and Road Observer of the Hupmobile United American Tour, was overtaken by illness just as the party reached Pendleton, Oregon, and is now at St. Anthony's Hospital, that place. The grind of six weeks' steady travel, in which the tourists covered 6,000 miles, crossed twenty-six states, visited twenty-six capitals and encountered terrific road conditions, told severely on Mr. Patterson. His many friends in newspaper, automobile and good roads circles will be pleased to learn that Mr. Patterson's illness will entail nothing more serious than a long and complete rest.

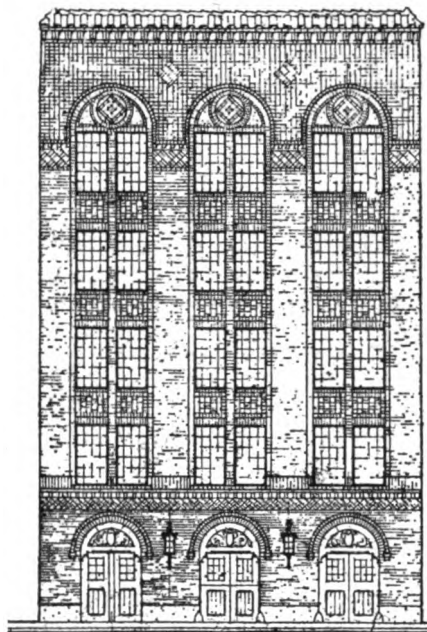
### Chalmers Prices to be Raised.

The Chalmers Motor Co. has announced an increase in the price of several of its models to become effective December 1. The seven-passenger touring car now selling for \$1,280 will go to \$1,350, the sedan selling at present for \$1,780 to \$1,850, the town car and limousine to from \$2,480 to \$2,550.

The modern garage fully equipped constitutes a department store of the automobile industry.

### A New Gotham Garage.

One of our New York City members sends us a photograph of the proposed new Owners' West 66th Street Garage. The



proprietors and regular customers will be partners. The building is a 5-story affair, 50x150 feet, and has a 130-car capacity. It will have all modern conveniences, including a first-class repair shop.

### How a Successful Accessory Business Was Built.

G. S. Semmes, of Semmes & Davies, has some very definite reasons to give for the success of his firm in the accessory business. He states the case thus:

When we had gone into business we established a policy—a policy that has continued through until today and that we hope will continue indefinitely. Our policy has been instantaneous service wherever it is possible and service as soon as possible where it could not be instantaneous, and the same price to everybody. Our friends could not come to us and have the price shaded in any degree.

After people began to know about us, our business grew more rapidly. Customers came and then came again. They were always sure of courteous treatment, and what they wanted, if it was possible to obtain it. We have never tried to keep our customers by offering them a discount by way of inducement, and we have made our policy of service so strong that a great many of our customers are depending on that.

A certain instance of a way that we serve customers comes to my mind. A certain customer of ours was stranded in Lincoln Park on his way to the opera with a blowout that could not be

fixed at once. He called us, as he used the Prowodnik tires, and asked if we could send down a tire right away. We called a taxi and, with a tire and repairman, shot him out to the disabled car. When our man got there he made the repair—at the same time turning the taxi over to our customer to proceed to the opera. When the tire was fixed the owner's car followed and picked the party up afterwards—incidentally this saved us the price of a taxi bill and, at the same time, made the desired impression on the customer.

We carry a large stock of accessories, as well as articles connected with automobiling that may not have any direct connection with the car itself, such as gloves, caps, and things of this nature. The accessories we handle are in nearly every case nationally advertised products, as we find they are more easily sold and give better satisfaction than products of an unknown nature.

I believe that the secret of success in the automobile accessory business is price maintenance at all times and giving the customer what he wants when he wants it.

### Organization From Within.

By Wesley T. Christine.

Many times the cry has been raised that organization of the retail motor trade should come from within. That idea is put forth by men who fail to understand the present limitation of those engaged in the retail automobile trade business.

Those industries composed of the small numbers of large units may readily organize themselves.

Those industries composed of the larger numbers of small units inevitably must be organized and work must be taken up and carried on in a business-like and systematic manner.

Not one of these units is able to devote the time and money necessary to interesting and enthusing his fellow competitors. Men trained in this work should be utilized and their experience, zeal and administrative talent made to yield cash results in the upbuilding and unification of our craft.

The Motor World is giving the association movement some excellent publicity. Let the other motor journals also lend this great cause a helping hand. Organization begets order, and order produces stability, and stability yields success—and the entire industry will profit thereby.

Insist that tire manufacturers protect their prices and thus insure to you your fair margin of profit. That brings up another matter: Is 12½ per cent margin a fair one? If it were larger would the dealer give away the extra percentage?

## New Patents Granted.

Brief Titles With Numbers Enabling the Reader to Send to Us for Complete Description—Enclose 10c Each to Cover Government Cost.

- 1,200,603. Fluid-Pressure Vulcanizing Apparatus. John R. Gammeter, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N. Y., a Corporation of New York. Filed Feb. 25, 1914. Serial No. 820,898. (Cl. 18—45.)
- 1,200,655. Safety Device for Automobiles. John Scheidemantel, Ellwood City, Pa. Filed Nov. 17, 1915. Serial No. 62,017. (Cl. 21—90.)
- 1,200,671. Tire-Protector. Lionel L. Warr, Malden, Mass. Filed Sept. 22, 1915. Serial No. 52,021. (Cl. 152—16.)
- 1,200,587. Vehicle-Lamp. William M. Cloninger, Oklahoma, Okla., assignor of one-half to C. W. White, Waco, Tex., and one-half to Leopold Harth, Fort Worth, Tex. Filed Apr. 22, 1915. Serial No. 23,015. (Cl. 240—44.)
- 1,200,486. Carburetor. Nathan F. Green, East Haven, Conn., assignor to Green's Pattern Shop, Incorporated, New Haven, Conn., a Corporation of Connecticut. Filed Aug. 26, 1913. Serial No. 786,765. (Cl. 261—41.)
- 1,200,552. Carburetor. Orrin S. Vigness, Northfield, Minn. Filed Aug. 28, 1915. Serial No. 47,839. (Cl. 261—18.)
- 1,200,556. Removable and Collapsible Top for Vehicles. William B. West, Philadelphia, Pa. Filed Apr. 17, 1915. Serial No. 21,959. (Cl. 21—62.)
- 1,200,670. Headlight-Controlling Device. Raymond D. Tufts and Charles P. Miller, Pittsfield, Mass., assignors of one-third to William R. Hagyard, Pittsfield, Mass. Filed June 22, 1915. Serial No. 35,638. (Cl. 240—62.)
- 1,200,623. Tire-Valve. Henry P. Kraft, Ridgewood, N. J. Filed July 25, 1914. Serial No. 853,126. (Cl. 152—12.)
- 1,200,644. Shock-Absorber. Frank Robert Parker, Battle Creek, Mich. Filed June 11, 1915. Serial No. 33,442. (Cl. 267—22.)
- 1,200,532. Spark-Plug. Albert Schmidt, Flint, Mich., assignor to Champion Ignition Company, Flint, Mich., a Corporation of Michigan. Filed July 24, 1913. Serial No. 780,866. (Cl. 123—169.)
- 1,200,643. Attachment for Radiator Caps. Edward J. Oswald and George W. Conner, Portland, Ore. Filed January 3, 1916. Serial No. 69,803. (Cl. 177—339.)
- 1,200,756. Shock-Absorber for Vehicles. John D. Ovens, Great Falls, Mont., assignor of one-fourth to Michael Wardinsky, one-fourth to Sidney Lindquist, and one-fourth to Gabriel Popovich, Great Falls, Mont. Filed October 2, 1915. Serial No. 53,791. (Cl. 267—2.)
- 1,200,823. Automobile-Radiator. Charles O. Erikson, Kissimmee, Fla., assignor, by direct and mesne assignments, to R. T. Butler, W. H. Arnold, and W. A. Gregory, Kissimmee, Fla. Filed December 14, 1915. Serial No. 66,871. (Cl. 257—129.)
- 1,200,745. Heating System for Automobiles. Charles Mariot, Akron, Ohio. Filed February 7, 1916. Serial No. 78,855. (Cl. 237—21.)
- 1,200,750. Safety Device for Automobiles. James H. Neal, Cambridge, Mass. Filed March 25, 1915. Serial No. 17,021. (Cl. 21—8.)
- 1,200,890. Carburetor. Haul Schuttler, Johannes Max Deutrich, and Max Johannes Deutrich, Charlottenburg, Germany, assignors to Pallas Vergaser G. M. B. H., Berlin-Charlottenburg, Germany. Filed November 19, 1912. Serial No. 732,309. (Cl. 261—72.)
- 1,200,934. Automobile-Washing Device. Clark A. Fuller, Mehomonie, Wis. Filed Au-

## Use the Association's Publication to Pass the Word Along.

By H. David, Garageman, Washington, D. C.

There are a great many things that confront the owner of a garage—especially when the competition along this line is becoming so keen.

I have found that one of the greatest assets one can have is a willingness to help by a suggestion here and there to the car owner, because it creates a feeling on his part that you are as much interested in the care of his car as he is.

This word has been passed along from one to another until now I am faced with the proposition of erecting a new and larger garage, and I have no doubt that the passing of suggestions from one garage owner to another through the medium of the Association's magazine will result in untold good.

gust 10, 1915. Serial No. 44,756. (Cl. 103—65.)

1,200,931. Transmission Mechanism for Automobiles. Donald M. Ferguson, Detroit, Mich., assignor to General Motors Company, Detroit, Mich. Filed Oct. 18, 1913. Serial No. 795,851. (Cl. 74—26.)

1,200,874. Device for Automatically Inflating Automobile-Tires. George E. R. Rothenbucher, New York, N. Y. Filed June 30, 1915. Serial No. 37,232. (Cl. 152—11.)

1,200,873. Transmission-Gear for Automobiles. Ernest Rosenberger, Mankato, Minn. Original application filed January 7, 1915. Serial No. 999. Divided and this application filed January 8, 1916. Serial No. 71,028. (Cl. 74—34.)

1,200,544. Dirigible Headlight for Automobiles. Charlie A. Traver, Wichita, Kans. Filed October 21, 1915. Serial No. 57,083. (Cl. 240,62.)

1,200,660. Transmission Mechanism. Harry J. Sherrill, Salda, Colo. Filed January 25, 1916. Serial No. 74,094. (Cl. 74—53.)

1,200,807. Antiskidding Tire-Protector. Alonzo L. Burt and Joseph Taylor, Chardon, Ohio, assignors of three-fourths to said Burt and one-fourth to said Taylor. Filed October 20, 1913. Serial No. 796,370. (Cl. 152—16.)

1,200,752. Safety Device for Automobiles. James H. Neal, Cambridge, Mass. Filed May 3, 1916. Serial No. 95,227. (Cl. 21—8.)

1,200,514. Device or Appliance for Cranking Automobiles. Arthur E. Miller, Sacramento, Cal. Filed June 14, 1916. Serial No. 103,673. (Cl. 74—33.)

1,201,199. Dust-Cap for Tire-Valves or the Like. Henry P. Kraft, Ridgewood, N. J. Filed December 17, 1914. Serial No. 877,794. (Cl. 152—12.)

1,200,663. Spark-Plug. Joseph John Smith, Jr., Benton Harbor, Mich. Filed Nov. 13, 1915. Serial No. 61,324. (Cl. 123—169.)

1,200,701. Piston-Ring. Edwin C. Blomberg, Rockford, Ill. Filed January 19, 1916. Serial No. 72,883. (Cl. 121—108.)

1,200,833. Spring-Hanger for Vehicles. Edward Gruber, Cleveland, Ohio, assignor to

The Hydraulic Pressed Steel Company, Cleveland, Ohio, a Corporation of Ohio. Filed October 9, 1914. Serial No. 865,960. (Cl. 21—182.)

1,200,784. Carburetor. John Welchwald, Chicago, Ill. Filed June 18, 1914. Serial No. 845,830. (Cl. 261—71.)

1,200,607. Spark-Plug. James H. Graham, Torrington, Conn., assignor to Splitdorf Electrical Company, Newark, N. J. Filed May 6, 1915. Serial No. 26,400. (Cl. 123—169.)

1,201,204. Tire. Berthold A. Lange, Webster Groves, Mo. Filed December 20, 1915. Serial No. 67,777. (Cl. 152—8.)

1,201,013. Carburetor. Phillip Cuthbert Phippen Booty, Windsor, Victoria, Australia. Filed April 20, 1915. Serial No. 22,668. (Cl. 261—51.)

1,201,220. Carburetor. Joseph C. Coulombe, Lowell, Mass., assignor to Heinze Electric Company, Lowell, Mass., a Corporation of Massachusetts. Filed February 26, 1914. Serial No. 821,109. (Cl. 261—48.)

1,201,141. Device for Controlling Glaring Lights of Automobile-Lamps. William N. Brenner, Brooklyn, N. Y. Filed January 14, 1916. Serial No. 72,153. (Cl. 240—45.2.)

1,201,222. Automobile-Trailer Coupling. Addi Benjamin Cadman, Beloit Wis., assignor to Warner Manufacturing Company, South Beloit, Ill., a Corporation of Illinois. Filed Feb. 26, 1916. Serial No. 80,581. (Cl. 21—137.)

1,202,554. Luggage-Carrier for Automobiles. William Marquette, Atlantic, Iowa. Filed April 8, 1916. Serial No. 89,898. (Cl. 224—29.)

1,202,067. Automatic Air-Valve for Explosive-Motors. Clayton Hulslander, Elmira, N. Y., assignor to Duplex Vitalizer Manufacturing Corporation, Elmira, N. Y., a Corporation of New York. Filed April 12, 1916. Serial No. 90,659. (Cl. 48—180.)

1,202,452. Tire-Rim Tool. John Bell Stroud, Pass Christian, Miss. Filed March 24, 1915. Serial No. 16,623. (Cl. 157—1.)

1,202,695. Inner Tube for Pneumatic Tires. Frank Fenton, Akron, Ohio, assignor to The Miller Rubber Company, Akron, Ohio, a Corporation of Ohio. Original application filed January 18, 1916. Serial No. 72,753, now Patent No. 1,190,744, dated July 11, 1916. Divided and this application filed May 29, 1916. Serial No. 100,633. (Cl. 152—13.)

1,202,425. Valve for Mixing Fluids. William D. Randall, Monett, Mo., assignor of one-half to Melvin W. Loyd, Afton, Okla. Filed Sept. 25, 1915. Serial No. 52,618. (Cl. 137—26.)

1,202,400. Valve-Grinder. Paul J. McCollough, St. Louis, Mo. Filed March 25, 1916. Serial No. 86,756. (Cl. 51—4.)

1,202,505. Auto-Top. Edgar M. Funk, Swanton, Vt. Filed August 6, 1915. Serial No. 43,833. (Cl. 21—62.)

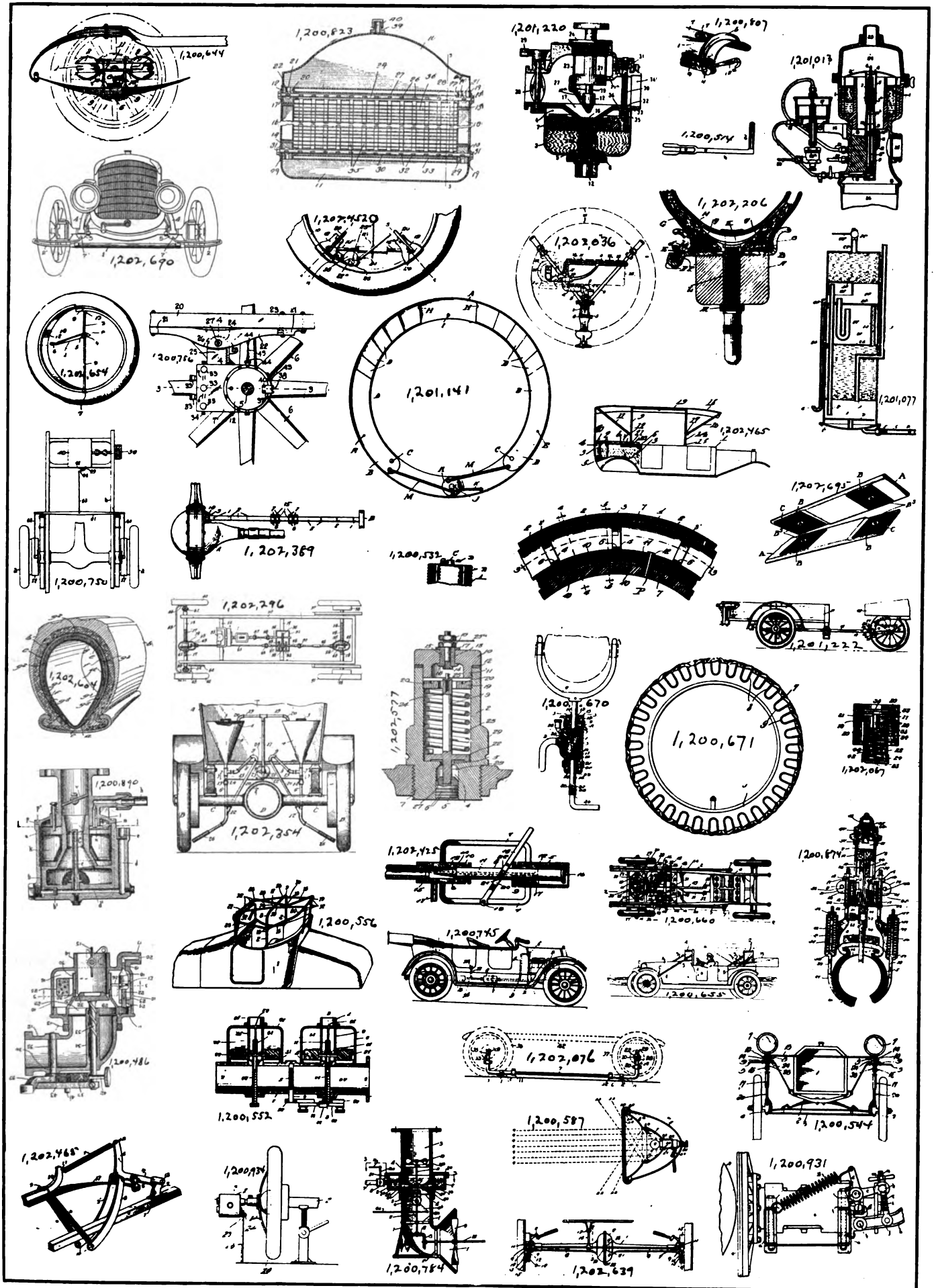
1,202,639. Brake Attachment for Automobiles. Robert M. Albright, Elkins, W. Va. Filed Nov. 8, 1915. Serial No. 60,399. (Cl. 21—8.)

1,202,036. Attachment for Automobiles. Grant F. Discher, Milwaukee, Wis. Filed January 31, 1916. Serial No. 75,411. (Cl. 224—29.)

1,202,202. Visible Alarm for Automobiles. Jefferson H. Millsaps, Washington, D. C. Filed June 14, 1915. Serial No. 34,058. (Cl. 177—314.)

1,202,354. Antiskidding Apparatus for Autocars, etc. William C. Bell, Winnetka, Ill. Filed January 29, 1916. Serial No. 75,107. (Cl. 105—263.)

1,202,291. Direction-Indicator for Automobiles. James Ingells, Muskegon, Mich. Filed July 6, 1915. Serial No. 38,361. (Cl. 177—311.)





# LOOK OUT

1,202,076. Automobile-Running-Gear Allner. Charles Line, Chicago, Ill. Filed March 25, 1915. Serial No. 16,826. (Cl. 33-180.)

1,202,188. Locking Device for Demountable Automobile-Wheel, Rims and the Like. Frank D. Hiller, Jr., Webster Groves, Mo., assignor to Hill-Ko Rim Lock Company, St. Louis, Mo., a Corporation of Missouri. Filed October 14, 1915. Serial No. 55,886. (Cl. 152-21.)

1,202,296. Automobile Transmission. Walter G. Lessert and Benjamin S. McWilliams, Gordon, Nebr. Filed Dec. 3, 1915. Serial No. 64,874. (Cl. 21-90.)

1,202,690. Automobile-Bumper. Rollie B. Fageol, Oakland, Cal. Filed June 6, 1910. Serial No. 565,154. Renewed November 21, 1913. Serial No. 802,325. (Cl. 213-39.)

1,202,726. Tire-Protector. Isaac Karpen, Chicago, Ill. Filed February 5, 1914. Serial No. 816,788. (Cl. 152-14.)

1,202,654. Rim-Tool. Frank A. Berry, London, Tenn. Filed March 17, 1916. Serial No. 84,889. (Cl. 157-1.)

1,202,389. Spring Torsion-Rod for Automobiles. Adrian H. Hoyt, Penacook, N. H. Filed March 27, 1916. Serial No. 87,103. (Cl. 21-90.)

1,202,382. Automobile-Emergency-Brake-Lever Lock. Edward R. Hampton, Milford, Conn. Filed November 30, 1915. Serial No. 64,217. (Cl. 70-90.)

1,202,441. Protective Mat for Use with Automobiles. Charles W. Small, Malden, Mass. Filed January 22, 1916. Serial No. 73,753. (Cl. 21-90.)

1,202,577. Circuit-Closing Valve for Internal-Combustion Engines. Rudolph James Peschman, Fort Sheridan, Ill. Filed August 6, 1915. Serial No. 43,965. (Cl. 200-27.)

1,202,390. Protector for Pneumatic Tires. Frederick H. Ihlenburg, New York, N. Y. Filed December 21, 1914. Serial No. 878,396. (Cl. 152-16.)

1,202,604. Pneumatic Tire. Matthew Sinclair Stevenson, London, England. Filed January 24, 1916.

1,202,696. Automobile-Signal. Jose Fernandez, Houston, Tex. Filed March 4, 1914. Serial No. 822,462. (Cl. 116-31.)

1,202,725. Tire-Protector. Isaac Karpen, Chicago, Ill. Filed Feb. 5, 1914. Serial No. 816,787. (Cl. 152-14.)

1,202,465. Shock-Absorber for Automobiles. Walter L. Wolford, Fremont, Mich. Filed June 30, 1916. Serial No. 106,962. (Cl. 267-19.)

1,202,206. Rim for Pneumatic Tires. Fredellia H. Moyer, Euclid Heights village, Ohio. Filed Feb. 5, 1915. Serial No. 6,232. (Cl. 152-21.)

## Selling Many Makes of Cars.

Some garagemen are free lances in the retail auto business and endeavor to sell any make of car that his customer wants. This scheme of merchandising does not fit into the exclusive agency plan in vogue with most of the manufacturers. Should the car makers change their policy in their own interests? Let us hear from garagemen and dealers on this point.

## Second Annual Pittsfield Show.

Pittsfield, Mass., will hold its second annual automobile show the week of Feb. 19, under the auspices of Company F, Second Massachusetts regiment. James J. Callahan, who managed the show last year, will have entire charge. All communications should be addressed to him.

## Charles W. Kuhns, alias Charles Murphy—Passing bad checks—A new game in which "phony" railway vouchers are a factor.

Charles W. Kuhns has been obtaining new automobiles by means of bad checks and fraudulent railway vouchers. He was arrested at Ithaca and Elmira, N. Y., and is now a fugitive, having jumped a bail bond signed by his father.

Kuhns is about six feet in height, weighs about 200 pounds, and sometimes has a small sandy moustache and sometimes smooth shaven. He has worked for railroads as a telegrapher and traveled in the West and Mexico. He was "pinched" in Ithaca recently for driving a car which he had obtained after giving what appeared to be a voucher drawn on the "Eastern Railway Association" and dated at Philadelphia. In August, 1915, he was arrested in Elmira under similar circumstances.

Sheriff C. A. Mackay of Tompkins county, N. Y., has reported the case as a means of warning car owners, dealers and garagemen against a very smooth swindler.

## Business Men's Protective and Detective Association, Chicago, Ill.—Collects Membership Fee and Furnishes No Service.

Loveland & McKay, garagemen and repairmen at Dawson, Minn., report the operation of the above named association in their territory by one Owen Lawry, Jr., agent. A \$10.00 membership fee is collected in advance and the member is to be supplied with road maps of Minnesota, county and state on consignment to resell, electric signs for garage and two hotels, twenty road signs advertising his garage, and other service which made the proposition look "almost too good to be true." The alleged association cannot be located in Chicago and Brothers Loveland and McKay believe that their fellow-garagemen should be warned against the scheme.

## Hudson Car Stolen—A. A. G. O. Member Wants Help in Locating it.

G. M. Sharrand, of the Buck Sales Co., Ft. Dodge, Ia., advises that a 1913, 4-cylinder, Model 37 Hudson 5-passenger touring car, Motor No. 3581, was sold by them July 8, 1916, to A. B. Melville who they have since had reason to suspect was engaged in bootlegging. He paid but a small amount down and they took a mortgage on the car for the balance. After making some payments he disappeared with the car which he had been storing in their garage and the last trace they had of

him was that he was in Sioux City, Ia., Oct. 7 and in Sioux Falls, S. D., Oct. 8, with the car.

Melville is a short, dark, delicate looking person, about 5 ft. 8 inches tall, weighing about 140 pounds and about thirty-five years old. He has a hardly noticeable limp caused by one leg being slightly shorter than the other. He may be accompanied by his wife.

Information should be sent direct to Mr. Sharrard at Ft. Dodge, or to us.

## Shryer Mercantile Agency, 115 S. Dearborn St., Chicago—Exacts membership fees, obtains accounts to collect—Out of business.

The Monroe City Auto Co., Monroe City, Mo., advise that they have turned over accounts to above agency for collection on Contract No. 3075 with that concern and cannot get any satisfaction.

On investigation we find that the concern was once located at the address given, then moved to 443 S. Dearborn St., then went out of business. Our advice to members is to pay no fee of any sort to a collection agency. Most of them are only interested in this advance contract or membership fee. The A. A. G. O. Collection Service is the most simple and effective service yet desired and should be used by all A. A. G. O. men.

We understand that solicitors are still at work for contracts or memberships for the Shryer concern, notwithstanding its retirement from the list of active business concerns.

## Thos. P. Keyes, Chicago Broker, charged with selling bogus stock.

Thomas P. Keyes, head of the real estate firm bearing his name, was arrested in his office in the Bush Temple, Chicago. Mrs. Ella McGramahan says he induced her to invest \$125 in the White Auto Service company, which, she charges, does not exist. Keyes is said to be an old-time offender, and should be left severely alone.

## Dr. Bennett Graff, Denver, Colo., did not pay garage bill.

Juhnke & Bell, Fairbury, Neb., report that Dr. Graff was in Fairbury some months ago and ran a bill of \$55 with them, and then drove his car away. J. & B. have since been unable to locate him.

## J. Gordon Davis—Paid garage bill with bad check or didn't pay at all.

The Monroe Street Garage Co., Toledo, O., reports the following for publication in the "Look Out" department of our journal:

"J. Gordon Davis drives a 12-5-pass. Chalmers with a broken starter, car in bad shape, travels with a young woman who he claims is his wife. Is selling  
(Continued to page 36.)

# The Law *and* The Garage Trade

*THIS department is edited by CHARLES C. BOMBAUGH, LL. B., general attorney of the American Association of Garage Owners, and a prominent practitioner in the federal and state courts; also lecturer and writer on commercial law. When information on any legal problem connected with the operation of your business is wanted, write this department.*

## Regarding the Lien Law.

As a general rule, where a lien holder, whenever property upon which he claims a lien is demanded of him, fails to assert his lien, but claims to retain possession of the property upon some other ground than his security, he thereby waives his lien.

This appears to be the law in California, Indiana, Massachusetts, New York and Pennsylvania.

But a mere failure to assert the lien without distinctly putting his right to hold the property on some other ground does not amount to a waiver.

Common law liens as distinguished from contract or statutory liens attach to the property without reference to ownership, and override all other rights in the property. But as to other liens, both legal and equitable, it is well settled, in the absence of statutory regulation, that a lien which is prior in point of time is prior in point of right, and is entitled to satisfaction out of the subject matter it binds, before other subsequent liens binding the same property can be satisfied, unless the prior lien be intrinsically defective or be displaced by some act of the party holding it, which shall postpone him to a subsequent claim.

Priorities of statutory liens are generally regulated by the statutes creating them. (It is wise to examine the statutes of the various states to determine what liens have priority.)

\* \* \*

## Breaking an Advertising Contract.

From Butler, Ind., an inquiry regarding liability for advertising under the facts following: A new hotel is leased and the lessee contracts for a half page ad in a certain trade publication and a garage owner signs an agreement with the hotel man to take half the space and pay half the price. Later the hotel building was sold and the rent increased, and the lessee notified the publication to cancel the contract, this being done before any action was taken by the publication to set up the ad, or before any cuts were made. The advertising contract provides that the hotel keeper should furnish photos of the building from which the cuts were to be made and inserted in the ad.

Question.—Is the garage owner liable to the publication for the half page he

contracted for with the lessee of the hotel?

Answer.—It is certain from these facts that the garage-man would not be liable to the publishers of the trade publication, inasmuch as he had no contract with them. In addition to that, even if he had contracted with the publication, his liability would only be for breach of contract and the measure of damage would only be the profit which the publishers would make on such an ad, because before any action was taken by the publisher, they had notice and were advised not to run the ad and that the contract was cancelled. The lessee of the hotel would perhaps be liable for damages to the publishers and the garage keeper in turn liable to the hotel lessee, but this would be only for actual damage (profit on the ad).

\* \* \*

## New York Lien Law.

The New York lien law gives a garage keeper a lien for storage, maintaining, keeping or repairing of motor vehicles and to one who in connection therewith repairs or furnishes gas or other supplies for such vehicles at the request or with the consent of the owner, whether such owner be a conditional vendee or a mortgagor remaining in possession.

The law further provides exactly in what manner the property can be sold to enforce or foreclose this lien. It requires that notice be served on the owner within the county where the lien arose, if he can be found; if he can not be located and served, notice can be served upon the person (not owner, but the user) for whose account the vehicle is held by serving him personally, if this can be done with the exercise of due diligence within the county where the lien arose; but if such person (either of them) cannot with due diligence be found in the county, then the notice can be served by mailing it to him at his last known place of residence, or to his last known post office address. If the lienor has been served with a notice that some other party has some interest in the property subject to the lien, a notice must also be given such parties claiming interest in the property. The notice in substance shall contain a statement of the following facts:

1. The nature of the debt, or the agreement under which the lien arose with itemized statement of the account, and the time when due.

2. A brief description of the personal property against which lien exists.

3. The estimated value of such property.

4. The amount of the lien at the time of giving of the notice and shall require the owner or person to pay the amount of the lien on or before the day mentioned in the notice, which shall not be less than 10 days from the service thereof and shall state the time when and the place where such property will be sold, if the amount of the lien is not paid.

If the agreement on which the lien is based provides for continuous care of the property the lienor is entitled to receive all sums which may accrue subsequent to the notice and prior to the payment or a sale of the property, and the notice should state that such additional sum is demanded. Such notice should be sworn to by the lienor to the effect that the lien upon the property is valid, that the debt upon which the lien is founded is due and has not been paid, and that the facts in such notice are true to the best of his knowledge and belief.

Sales must be at public auction to the highest bidder and held in the city or town where the lien was acquired. After the time for payment of the amount of the lien specified in the notice required to be served by the preceding paragraph, notice of such sale describing the property and stating name of the owner or persons for whose account the same is then held, and the time and place of such sale, shall be published once a week for two consecutive weeks in a newspaper published in the town or city where the sale is held, and such sale shall not be less than fifteen days from first publication. If there be no newspaper published in such town, such notice shall be posted at least ten days before such sale in not less than six conspicuous places in the town or city where such sale is to be held.

At any time before sale, the owner may redeem by paying the amount due on account of the lien and whatever legitimate expenses have been incurred by the lienor up to the time of payment.

From the proceeds of the sale the lienor shall retain the amount of his lien and expenses, and the balance, if any, shall be held subject to the demand of the owner, his assignee, or legal representative, and a notice that such balance is so held shall be served personally or by mail on the owner of the property or contractor of the obligation. If the balance remains unclaimed for thirty days from date of sale, same shall be deposited with the treasurer or chamberlain of the city or village, or with the supervisor of the town where the sale is held. There shall be filed with the deposit an affidavit

of the lienor stating the name and place of residence of the owner of the property, if known, the articles sold, the price obtained therefor, that notice required by this act was duly served and how served upon such owner, and that sale was legally advertised and how. And there shall also be filed a copy of the notice served upon the owner of the property and notice of sale published or posted as required.

The provisions of this statute seem a little cumbersome and the writer suggests the safest way is to have some competent attorney handle the matter for the garage keeper. I think this law is fair and just and amply protects the garage keeper even as against the so-called conditional sale contract, as well as the chattel mortgage. The statute must be strictly complied with, for if not, a sale under this law would be no defense to an action brought for the value of the property.

(Continued from page 34.)

stock of different concerns. He gave us two checks \$2.50 and \$1.50 drawn on The Lake Shore Banking and Trust Co. of Cleveland. We sent them through for collection and bank here (Ohio) advised us that the Cleveland bank could give no information regarding Davis, did not know him. Checks dated Sept. 12, numbered 18 and 19.

"During the writer's absence from the office Davis drove his car up and filled with gas. After filling he failed to have enough money and said he would go at once to his room and return with the money. Later investigation disclosed that he had paid his room rent and left the room before he came here, and was then on his way out of the city. He also tried to get us to cash a check for \$20.00"

#### **G. A. Bronson, no longer represents A. A. G. O.—Has done crooked work.**

G. A. Bronson, a representative of the A. A. G. O. who has some good work for this Association to his credit, has recently gone wrong and the trade is hereby warned against him.

Bronson collects \$5.00 and does not give the A. A. G. O. printed-form receipt, neither does he turn in the signed application for membership and subscription or the money he collects above his commission. National Headquarters has no means of knowing whom he has victimized only as they write us or an honest field representative goes over his route and uncovers the rascality.

Of course, the A. A. G. O. will not allow any of these friends to lose the \$5.00 they paid but will furnish the service just as though Bronson had acted squarely with them and us, provided they did business with Bronson before the issuance of this warning.



A. A. G. O. OFFICE,  
1108 Woodworth Bldg.

E. H. PULLMAN,  
Representative.

#### **Liquid Measuring Pumps.**

Washington, D. C., October 31, 1916.  
—The Bureau of Standards, Department of Commerce, has recently published a report, "Technologic Paper No. 81," pertaining to the accuracy of liquid measuring pumps commonly used in dispensing gasoline.

The development of the cheap motor car resulting in a phenomenal increase in the number of cars in use, has brought about a steady increase in the quantity of gasoline consumed, and this together with the present high price of gasoline makes the method and accuracy of the retail dispensing of gasoline a question of the highest importance.

On account of the convenience of the measuring pump in delivering gasoline to the consumer with a minimum of evaporation, spillage and fire hazard, by far the greater part of this commodity is sold through this type of measuring apparatus.

The principal causes of short delivery are leaks in valves or piping; formation of vapor due to excessive suction lift, or the introduction of air under the piston; failure to correct for the inertia of a long column of moving liquid; the use of long filling hoses with a low connection at the pump, making proper draining of hose an impossibility; "short stroking" or operation of pump at less than full stroke (usually deliberate); and slippage past valves and piston.

A proper routine for inspectors to use in testing measuring pumps, as well as the requisites for sealing and the manner of keeping detailed records, are completely described in the full paper.

Of numerous measuring systems of various types chosen at random and tested by the Bureau of Standards' inspector in a number of different cities, 70 to 80 per cent had excessive errors. There were many outfits so constructed as to be absolutely unsuited for retail liquid dispensing. Of those outfits which were incorrect, nearly all were delivering in deficiency, which is unfortunately a characteristic of the types of measuring pumps now most commonly used. This tendency toward deficient measurement is worthy of careful consideration as it results in the aggregate to enormous monetary losses to the public.

Since this paper was written, subsequent tests in many cities corroborate the figures given above in every essential, and it is safe to say that in all

localities not under an efficient and competent weights and measures administration, and in a large majority of those which do have a relatively competent weights and measures administration, the condition of measuring pumps is such that the motoring public is being subjected to regular and continuous shortages in its purchases of gasoline. Figures based on the best estimates obtainable show that in the state of Illinois, the losses to the people of the commonwealth due to short measure in gasoline are not less than \$530,000 annually.

Washington, D. C., November 3, 1916.  
The gasoline situation continues a live subject here. Officials of the federal and local governments are looking into the matter of establishing a standard to secure purity of product.

District Corporation Counsel Syme says the proper way to prevent the sale of adulterated gasoline is to establish a standard for the product and to revoke the licenses of dealers selling a product that does not measure up to the standard. He has investigated the local laws and finds that the District Commission has authority to govern the situation in this way without the aid of additional legislation. He proposes that the Bureau of Standards shall fix a standard for gasoline and that the District Commission adopt that standard. He says a license to sell implies that the article to be sold is unadulterated and up to the standard.

Director Stratton of the Bureau of Standards says the matter to be settled is not one of price, but of quality. Tests will be made at the bureau and a standard fixed within a few weeks.

Director Manning of the Bureau of Mines says we have reached the height of crude oil production and that the supply of petroleum will not last more than twenty-five or thirty years.

#### **Auto Experts for Government.**

On October 24th the U. S. Civil Service Commission held an examination to secure automobile experts for the government service. The appointees are for the Ordnance Department of the Army at \$2,400 a year salary. The initial employment of the appointee will be at the Rock Island, Ill., Arsenal. The appointee will be required to inspect the purchase and operation of automobiles.

### Caution in Gasoline Legislation.

Washington, D. C., October 31, 1916.  
—In view of the fact that statements have appeared in the press to the effect that the Bureau of Standards will formulate a test which may be applied by any purchasers to detect at once an inferior product, it becomes necessary to correct any false impression that may have been aroused and to add a brief summary of the situation.

In the first place, no such simple test is known in the present state of the science of petroleum technology. In the early days of the petroleum industry, when all our gasolines, kerosenes, fuel oils, and lubricating oils were derived from one source, viz., Pennsylvania crude petroleum, a simple measurement of the specific gravity, or what amounts to the same thing, the Baume number, by means of a hydrometer, served as a fairly reliable indication of the qualities of these products. Today, however, the specific gravity test is practically worthless as a check on the suitability of a gasoline, for example, for a given motor equipment. The reason why this is so is that many new oil fields have been opened up in recent years that yield petroleum of very different physical and chemical properties and new methods of manufacture have been introduced that yield products having very different properties in no way related to the specific gravities. The problem is an extremely complicated one, and presupposes a definition of gasoline.

It is highly probable that the specification or definition of standard gasoline and the tests that will be necessary to determine whether the gasoline complies with the specifications will be quite complicated and will require the services of a trained chemist to make them. It seems most probable that the definition of gasoline will have to be based on the percentage that distills over between specified temperatures, when the distillation is carried out under specified conditions. This distillation test, speaking in non-technical terms, is a measure of the freedom with which the gasoline will vaporize. The gasoline must not vaporize too freely for two reasons, one that it would not be safe, and secondly its loss in storage, by evaporation, would be too great. Hence, the specification may have to contain limitations of the percentage distilling over below a certain temperature, coupled, perhaps, with a proviso that certain percentages shall distil over below other fixed temperatures, in order that requisite amounts of low-boiling constituents shall be present to insure easy starting of an engine. Likewise the specification must contain a provision that all must distil over below a certain maximum temperature, in order to exclude from the gasoline

**ANNUAL CONVENTION**  
**A. A. G. O.**  
The Dealer and Service Organization of the Automobile Trade  
**AUDITORIUM HOTEL**  
**Chicago, Illinois, Feb. 1 and 2**  
**During the Chicago Automobile Show**  
 Every Auto Dealer, Garageman, Repairman and  
☐ ☐ ☐ Serviceman should attend. ☐ ☐ ☐

the heavier petroleum distillates, such as kerosene.

Complicated as such a specification as has been briefly outlined above may seem to the layman, it is not at all improbable that other tests must be devised to limit the percentage of so-called aromatic and unsaturated hydrocarbons that may be permitted in a good motor gasoline.

The question still arises whether or not it may be necessary to define two or more grades of motor gasoline.

Enough has been said to show that no simple tests can be used to fix the composition of such complex mixtures of hydrocarbons as are represented by gasolines. The popular opinion that specific gravity (or degrees Baume) will suffice as a test for gasoline is unfortunately erroneous. For example, a gasoline of 70 degrees Baume from some oil fields is no more volatile than a gasoline of 65 degrees Baume from other oil fields.

Another point about which there is often a misunderstanding is the relative efficiency of high and low density gasolines. It is common opinion of gasoline users that gasoline of low specific gravity (or high Baume reading) is more efficient in that they can get more miles out of a gallon. This is not true if the motor equipment is adapted to the fuel used.

The message which it is particularly desired to convey is that the public should not expect hasty action. It is extremely important that we proceed with the greatest caution and in the light of the fullest technical information. There is only one way, or at most a very few ways, of doing the right thing, while there are an infinite number of

ways of doing the wrong thing. A mistake of any kind, such as a specification that is unnecessarily restricted and which might unduly limit competition will disturb economic and manufacturing conditions and might only result in imposing greater burdens on the consuming public instead of lessening them.

There are two aspects to the question under consideration, the one local, the other national. There is no doubt that the advantages that would result from a satisfactory standardization of gasoline by the National Government are many. Not the least of these would be its influence on state and municipal legislation relating to this question, and its effect in making such legislation more nearly uniform throughout the country. Legislative bodies are beginning to take up this question and much of this legislation is certain to be ill advised, although enacted with the best intentions, because it cannot in the nature of things receive the careful consideration of technical experts that is required for the satisfactory solution of questions of this kind. It will readily be seen that the effect of indiscriminate legislation might produce conditions nothing short of chaotic.

The Bureau of Mines has done a great deal of work on gasolines derived from different oil fields and by different methods of manufacture. Any experimental work incident to the use of gasoline as a fuel belongs primarily to that bureau. The Bureau of Standards, on the other hand, is primarily interested in questions relating to its standardization. That bureau is accordingly entering into co-operation with the Bureau of Mines, with a view to arriving at a satisfactory answer to the question as to what recommendations are possible at this time and what should be done. **Before any final decisions are reached, all interested parties will be given a hearing.**

The use of the A. A. G. O. emblem on your stationery will indicate to those who see it that you do not stand alone, but have a great national institution behind you.

### A GARAGE WITH A BIG TRADE



The Markscheffel Motor Co., Colorado Springs, Colo., of which C. B. Adams and A. W. Markscheffel are the controlling factors, own and operate the above garage and salesroom. It is one of the most up-to-date and prosperous retail motor and service places in Colorado and in layout, conveniences, service and volume of business done, it is second to none in that part of the country for the capital invested. They are good A. A. G. O. men and stand for a square deal for the public as well as themselves and the craft to which they belong.

# Garage, Shop *and* Store Insurance

FIRE INSURANCE AND CASUALTY INSURANCE can only be reduced by the members co-operating with the attorneys of the A. A. G. O. Inter-Insurance Exchange, which is now ready to perform its first functions. It has taken time and heroic effort to obtain the concessions for our members which we have obtained, and we can most emphatically say to you that no organization, either old or of recent origin, can show its members such substantial machinery to save them on their insurance premiums.

This saving is ready for you now. All you have to do is to let us show you by cutting out and filling in the **Inspection Statement** below. Fill it in completely, not partially. Do not leave unanswered any question.

We are not accepting any Garage or Auto Dealer's risk which is in a building constructed of wood. The building must be built of Brick, Concrete or Cement Block; *casualty risk in any building.*

## INSPECTION STATEMENT.

File No. ....

Inspection date....., 19..... Made by.....

Name of Assured..... Business.....

Street Address of Assured.....

County..... Town..... State.....

Other occupancies ..... What is their Business?.....

Number of Floors and Use of Each.....

Construction of Building..... Elevators, if any.....

Brick, Tile, Concrete or Cement Block.....

Floors, Cement, Asphalt, Wood..... Posts, Wood or Iron.....

Beams, Wood or Steel..... Ceilings, Open or Sheathed, Lath and Plaster.....

Number of Sections..... Frontage of Building..... Length of Building.....

Exposures to Building: North..... South.....

East..... West.....

Outside Protection..... Inside Protection.....

Is Gasoline Tank Outside of Building?..... Is it an Approved Type?.....

Name of System and Size of Same..... Watchman.....

Number of Fire Extinguishers and Make.....

Is the Fire Department a Paid or Volunteer Organization? .....

Name of Owner of Building..... Value of Building.....

Value of Contents Excluding Automobiles..... Is Garage Open at All Hours?.....

Present Rate on Building..... Present Rate on Contents..... Expiration.....

I hereby submit the above schedule, which is true to the best of my belief, and request a rate for Insurance.

[This Information confidential.]

Name.....



### Do You Want a Substantial Saving Now?

Every mail brings us information from members wherein they state that they cannot account for the rate placed upon their garage, store or shop and their contents. This is an old story with us now. You may fret, fume, fuss and fan the air to no purpose; you have the remedy which all progressive organizations have taken and that is to start an Inter-Insurance Exchange.

We have statements from members all over the country telling us that insurance is made prohibitive to them on account of the high rate.

We have during the past month shown where members who co-operate with the attorneys of this Exchange can save hundreds, some thousands, of dollars in insurance premiums, and all it costs is your membership in the association. *Is it worth while?*

### The Power of Attorney.

All Inter-Insurance Exchanges are conducted by the subscribers giving to one or more officials of their particular trade or association an instrument known as their "power of attorney." The individual holding this authority from the subscribers must have the fullest powers and widest latitude to perform the services required of him. In the case of insurance he must have power to re-insure, cancel, adjust, settle, and act for each subscriber in indemnifying one with the other.

Stock insurance representatives usually hold up their hands in abject terror of the dangers to any one of their customers contemplating going into an Inter-Insurance Exchange. It is obvious why. They know once an over-rated, over-burdened customer tastes the sweets of refunded premiums he is lost to them forever and to old-line insurance.

### Re-Insurance Saving on Rates.

We must have an adequate number of subscribers before members can come into the fullest benefits of our Inter-Insurance Exchange.

In the meantime, we are re-insuring subscribing members at a substantial saving. Our saving thus far has not been less than 10 per cent of the premium, and as much as 72 per cent of a reduction has been made on one member's rate.

Members whose place of business is remote from the national headquarters seem to be as well off as members almost within the confines of the great city of Chicago in the way of discriminatory rates.

We have in mind one of our good members who tried time and again to have his rates lowered by the installation of safety appliances of various kinds and at large expense made alterations to suit fire inspectors, but it was all to no avail. *He stood alone.* Then this exchange came, backed up by a great Association; the re-

sult was over two hundred dollars less premium!

### It Is Such Easy Picking.

Which way do you want your insurance premiums handled? It is up to you. We have provided the machinery for reducing your insurance cost, and of course there is the old way. All you have to do to save money on this item of expense is get aboard the Inter-Insurance A. A. G. O. Special.

Let's say you pay the A. A. G. O. Inter-Insurance Exchange a \$100.00 premium. You also pay Any old-stock company a \$100.00 premium.

<i>Inter-Insurance Way.</i>	<i>Any Old Stock Co. Way.</i>
\$100.00 premium.	\$100 premium
25% Exchange expenses	30% to general agency expense.
75% to pay losses. That which is not paid in losses re-funded to subscribers.	12½% home office expenses 10% dividend to stockholders. 47% to pay losses, balance to reserve.

We select risks. We also specialize on only one class of risks. Each subscriber is keenly interested in keeping down the loss ratio. We request subscribers to leave part of their refund to be placed in our reserve account (to your own credit). Best's report says no failures in Inter-Insurance have occurred since the plan was started in 1881.

### Liability Insurance as You Need It.

This sounds simple, doesn't it? But are you, Mr. Garageman and Auto Dealer, buying Liability or Casualty Insurance as you need it? And, furthermore, wouldn't it be splendid if you could go farther and have your convenience and pocketbook considered by paying for this protection *as you need it?*

We have it designed for you specifically. As your business fluctuates from month to month, you are to pay your premium each thirty days, and then, inasmuch as we have been working out this plan for you, we propose to give you coverage on the operations of your business heretofore overlooked by stock companies—coverage that was necessary and vital to you from the time the first garage and auto store or repair shop opened to store, handle, repair and demonstrate automobiles

### Queries.

When you pay a premium to a stock company, what is your cost, brother?

Why—er—ah—less—er—see!! The whole darn premium, to be sure.

You struck it the very first time. Now, then, you pay the A. A. G. O. Inter-Insurance Exchange the same premium, but your insurance expense is only 25 per cent of your premium and is guaranteed

in the power conferred on the attorney of the Exchange. No more, nor less—and the balance is placed to your credit with which to pay losses and *refunds* (to you).

*It is strange that the garage and auto trade is the only large industry up to the present time which has not had the benefit of the Inter-Insurance Cost-Saving Idea. The reason must be that the industry has been until now without a virile National Association.*

### Protection Granted Under A. A. G. O. Indemnity Contracts.

**Workman's Compensation.**—Complete coverage of all of your obligations under the workmen's compensation law in effect in your state. This form covers all possible claims for compensation made upon you as the result of injuries to or death of your employes because of accidents of whatsoever nature or cause occurring in the course of their employment.

**Employer's Liability.**—Covers claims for damages and suits because of injuries to or death of employes due to accidents occurring in any of the operations incidental to your business. This form of coverage to apply in states which have not yet passed compensation laws.

**Public Liability.**—Covers claims for damages made by all persons other than employes because of accidents causing personal injuries or death and arising from any of the operations incidental to your business. This form covers all claims or suits, whether groundless or not, and agrees to pay all expenses of litigation in addition to the limits named in the indemnity contract.

**Property Damage and Collision.**—Covers all claims made upon you for damage to cars of your patrons or caused by such cars to the property of others while in charge of yourself or your employes. Maximum limit of coverage, \$1,000.

**Livery Vehicles.**—Covers claims as above because of accidents due to the operation of cars for hire.

**Other Features** of coverage against losses which have proven a heavy source of expense and annoyance to garage owners and which have never heretofore been granted by stock or other insurance organizations are now being worked out by the underwriter department and will be put into effect shortly.

**Do You Appreciate** what it will mean to you to have your claims and losses adjusted by expert adjusters who are your employes and whose prime object will not be the fighting and scaling down of claims in order to increase dividends to eastern stockholders, but, instead, expeditious settlement of all just claims with satisfaction to yourself and avoidance of all unnecessary irritation to your patrons?

# Story of Lincoln Highway

**How Its Use by the Public Means Harvest-Time for Garagemen—Public Travel Over Highway Is Doubling Yearly**

**By Henry B. Joy, President, Lincoln Highway Association**

Touring, either transcontinental or otherwise, follows good roads and the figures secured on the growth of transcontinental touring indicate graphically its first importance to those who do business with the traveling public on the main thoroughfares. The garageman, repairman and supply dealer, the constituency represented by the A. A. G. O., and the American Garage and Auto Dealer, are near the head of the list of those who benefit.

The widespread interest in road improvement, which has been rapidly growing for several years, received its greatest impetus with the conception and development of the Lincoln Highway. The press of the country, both daily and periodical, including the motor and garage publications like yours, has given unlimited publicity to the subject and a general demand for better road conditions has been created and has been answered by a rapid improvement, practically of the main highways.

## Once An Idea, Now a Fact.

Less than three years ago the Lincoln Highway was but an idea in the minds of a few constrictive dreamers, its route was a line on the map, as imaginary to all intents and purposes, as the equator. A cross country tour was so rare as to be considered a curiosity by the motoring public. Today the Lincoln Highway is the longest single connecting road in the world and the number of automobiles that have traveled it from one Coast to the other runs into the thousands. The garages and supply stations on the route are numerous and many of them estimate that the major portion of their revenues come from tourists.

It is difficult to arrive at any exact figure as to the extent of road construction on the Lincoln Highway. Work is constantly in progress in almost every state. The Lincoln Highway Association's records show the expenditure of over \$5,000,000 during the past twelve months upon road work and maintenance; seedling miles built to standard specifications have been established on the highway in Ohio, Indiana, Illinois, Iowa and Nebraska with cement contributed by the association, but the figures relating to the development of transcontinental touring are of more direct interest than those denoting road improvement and point to the same conclusion.

A number of factors have joined to increase the number of transcontinental tourists this year, among which must be considered the improvement of the Lincoln Highway and the publicity which has constantly kept its condition before the public, and the war in Europe which shut off the annual motor migration to England and the Continent and kept a vast number of automobilists on the home side of the Atlantic. I may add that the encouragement given the movement by the garage fraternity is a factor that should not be over-



President H. B. Joy.

looked, as these men are ever in the vanguard of activities of every sort which tend to popularize motoring and increase the need for their services.

## 1916 Touring Figures.

The figures which have just been secured during the touring season of 1916 on the subject of transcontinental touring are alive with interest. The national headquarters of the Lincoln Highway Association at Detroit has become something of a clearing house for touring information and thousands of letters of inquiry are received from which some idea of the growth of long distance touring in this country can be secured. In addition, the hundreds of Lincoln Highway Consuls or representatives of the association in the various towns and cities along the Lincoln Highway from one coast to the other report conditions and traffic volume.

Before the beginning of the present season, Lincoln Highway officials estimated that a substantial increase in the number of cars which would drive across the country this year would be noted, despite the fact that the great exposition in California would no longer be a drawing card. Figures secured and reported at different points along the route substantiate this conclusion. The increase runs about 50 per cent over 1915, which in turn was 100 per cent greater than the year before.

I quote from the press of three cities at widely separated points along the Lincoln Highway, one from the East, one from the Middle West, and one from the Far West, and in these three short articles the whole story is told. It is the story of the business value of the Lincoln Highway from New York to San Francisco. It is a story for the business man to heed.

## Three Cases Cited.

When the Lincoln Highway was talked about several years ago, local folks had an idea that it would help Chambersburg somewhat, but nobody hereabouts dreamed that in a few short years this main transcontinental highway would mean that from ordinary sources of travel that for two successive nights, every available sleeping room in Chambersburg would be occupied while scores of tourists would be compelled to go to other towns to seek sleeping accommodations, but this very thing happened Saturday and last night.—*Chambersburg Public Opinion*.

That the Lincoln Highway is traveled extensively by tourists is evidenced by the fact that in one day over 60 cars from different points passed through Dixon, westward and eastward bound. Yesterday in one-half hour tourists passed through the city from the following states: Ohio, Kentucky, Florida, New York, Maine, Indiana, Washington, California, Arizona and Georgia in the order named. And while this gives a wide representation in a brief space of time, it is frequently and almost daily that this record is duplicated. There is no more popular thoroughfare traversed by tourists than the Lincoln Highway and it is fortunate that Dixon is located upon it.—*Dixon, Ill., Leader*.

It is conservatively estimated that 1,600 autos passed through Ely from the opening of the season to September 1st, and it is probable that at least 1,000 more will pass through before the close of the season. It is probable that these autos, which are usually occupied by about four people, leave an average of \$20.00 each in Whiteside County. The greater portion of the travelers stop over night here and engage

(Continued on page 52.)

### Goodyear Rubber Exhibit.

An elaborate exhibit tracing Goodyear tires and other products of the company from the tropical jungles to the finished product, ready for service, was one of the most interesting and instructive features of The Goodyear Tire & Rubber Company's district and branch managers' conference held at the Akron factory last week.

On the same floor with the conference room the company's experts had artistically arranged a most comprehensive layout of the entire Goodyear line, in a series of ten individual exhibits. Seven of these were given over to the display of Pneumatic Automobile Tires, Solid Tires, Tubes, Tire Savers, Motorcycle and Bicycle Tires, Aeronautic Supplies and Mechanical Goods. The other three displayed special features of the Chemical, Service and Raw Materials departments.



In each of the individual exhibits the particular product shown was traced through the successive steps in the process of manufacture. Unusually interesting and perhaps the most educational of all was the raw materials display in which were shown specimens of every kind of crude rubber, and samples of the numerous kinds of cotton fabric, entering into the making of Goodyear goods. This display included a section of rubber tree showing how rubber is taken, in liquid form, from the tree through incisions in the bark, and traced each step in the production of fabric, from the cotton plant to the finest grades of duck. The service department display portrayed vividly how proper inflation and careful driving increases tire mileage, and how lack of care and improper inflation causes the premature demise of thousands of tires.

A tire was shown which had run 44,115 miles in bus service.

### Dodge Bros. 100,000 Car.

Dodge Brothers recently turned out car No. 100,000, and the event was celebrated at the big plant in Detroit by taking motion pictures of the final assembly of the car. Dodge Brothers produced their first car on a commercial basis on December 4, 1914, and by reaching 100,000 now in less than two years they establish an entirely new record in the motor car industry.

The evidence of the great growth of the company is further emphasized by the fact that when the drawings for position in the automobile shows of 1916 at New York and Chicago were made recently, Dodge Brothers were found in fourth place in the industry in volume of business. This was an advance in one year from eighth place to fourth place. Car No. 100,000 is going to have quite an eventful time. It was

### The Four-Season Six Booklet.

Mitchell Motors Co., Racine, Wis., has issued a booklet on its Four-Season Six and which is the equal typographically of anything turned out this season. The text gives a running description of the illustrations, these showing exterior and interior views of the enclosed types of Mitchell cars. Only a person in the depths of pessimism could fail of a favorable opinion of the cars after a glance at their high class presentation in the booklet.

### W. C. Hale Joins Coey Force.

William C. Hale of Chicago has been elected Vice President of the Coey Motor Company in charge of the Financial Department. This addition to the Coey force has become necessary in anticipation of building a large factory at Chicago, with a capacity to turn out seventy cars a day. Mr. Coey, in common with most successful men who have a faculty for picking the best men for a position, has selected Mr. Hale for the financial part of his work. Mr. Hale's long experience in financial matters and in the handling of men, particularly fits him for this position.

### Veteran "Abbott-Detroit" Car Has a 300,000-Mile Record.

Proof of the extraordinary sturdiness and thorough construction of the Abbott-Detroit car is furnished by the performance of one of these machines in bus service between Lakewood and Asbury Park, New Jersey.

Mr. Sanders of Longenecker & Sanders, New York, reports that the car has already run more than 300,000 miles without any expense other than gasoline and tires, together with a few minor replacements that are negligible as to amount involved. The chassis, which is of the Abbott-Detroit "44" type, is equipped with a special body seating eight passengers in addition to the driver. The machine has been operated during a period of three years over a regular route, and has been handled by a relay of drivers, keeping the machine in continuous operation twenty hours per day. According to the reports kept by the Bus Company, the car travels over three hundred to three hundred and seventy-five miles per day, carrying an average load of about five passengers. This car was built along the same lines of construction as the famous Abbott-Detroit "Bull-Dog."

The sturdy character of the Abbott-Detroit is supplemented in the 1917 line by an unusually attractive line of bodies that will appeal to the fastidious buyer. The closed types for Fall and Winter have just been placed on display and embody all the luxurious fixtures and fittings that the most critical could demand.

shipped to the Henshaw Motor Co., of Boston, which had applied for the car months ago. There will be a public reception at which many officials will welcome the car, and it will be escorted about the city by the first Dodge Brothers car received in Boston. It is the latter which has earned the name of "Preparedness Car" by its trips through New England in the interest of proper preparedness.

### Liberty Sixes Sell Fast.

Liberty Motor Car Company, Detroit, had its big day October 13, when its full day's product of thirty-eight Liberty Sixes was sold and forwarded to eight dealers in different states. Liberty Six number one was shipped July 4. President Percy Owen is bending all his energies toward increasing the output as every car is sold before it is made.

### Haynes Cars Make History.

With the exception of one model, the Haynes Automobile Company has information of at least one car of every type they have made. The single exception is the oldest model. This made its appearance on the automobile market in 1896, and represented the advent of automobile manufacturing as a commercial proposition.

A collection of the different Haynes models, would constitute a visual history of the progress that has taken place in motor car making in the last nineteen years, and at the same time would trace the development of the two cylinder horizontal opposed motor into a multiple cylinder V-type production. The strides made in bringing the body of the two passenger runabout of 1900, on which top and side curtains were extra equipment, to the present closed car standard of appointment is a matter of motor car progress of equal interest to the motorist.

The returns of the old car contest sharply divide the history of automobile production into three periods, marked by the dominance of the two, four, and six cylinder cars. The two cylinder cars were used generally from 1896 to 1905, when the four cylinder motors replaced them.

The four cylinder car met with general acceptance until 1911, when the six cylinder automobile, on account of its ability to reduce vibration, began to make its first serious inroads on four cylinder popularity.

The "Light Six" rapidly brought the six cylinder car into general favor, and now the multiple cylinder cars are attracting attention.

### Good Roads Enthusiast to Be President.

"Now that both Hughes and Wilson have declared themselves enthusiastically for more good roads we know that, whatever happens on November 7, the most powerful national influences will be exerted to promote this great work," says H. P. Branstetter of the KisselKar.

"When candidates for office voluntarily assume this position, it is a certain sign that the people are practically unanimous for continued work on the highways. If there were need for confirmation of this fact, one need only to have talked with any of the many cross-country tourists this year. We have entertained several KisselKar owners who are making the transcontinental tour and everyone of them remarked about the favorable attitude toward more good roads wherever they had been."

### Farish Gets Promotion.

Mr. H. S. Farish has been appointed assistant to the President and General Manager, and also Purchasing Agent of the Abbott Corporation.

### Runyan with Westcott Co.

The Westcott Motor Car Company, Springfield, Ohio, announces the appointment of Paul W. Runyan in direct charge of publicity. Mr. Runyan was formerly assistant to the sales and advertising manager of The Robbins & Myers Company, Springfield, Ohio, manufacturers of electric fans and motors. They are also prominently identified with the motor car industry by the extensive manufacture of parts for some of the more prominent concerns building starting and lighting systems.



Resigning in December, 1915, he has been actively engaged in the retail automobile business in Springfield, meeting with unusual success. The Westcott Company can be congratulated on securing his services in the above capacity and he should prove a valuable addition to their well balanced organization.

### Velie Plants Enlarged.

It was only a few weeks ago that the Velie Motor Vehicle Company, Moline, Ill., announced its new car, the Biltwell Six. The announcement has forced an enlargement of its pleasure car plant by 300 per cent. This enlargement has forced the Velie truck factory into a separate plant, allowing for the 260 per cent output in trucks.

"Four of the enormous Velie buildings are now occupied solely by Pleasure Car construction. Through a progressive assembly system from start to finish not an extra step is necessary. The chassis receives its wheels, fenders, body and equipment as it moves from one department to another. The simple fact that Velie builds, paints and trims its own bodies, that the fenders are made and enameled on the ground, and that the chassis is built by Velie from stem to stern, makes this system the more remarkable and efficient.

### Repeaters Among Automobile Buyers.

"Something like 3,000,000 automobiles are running in the United States and there is still an estimated domestic market for 7,000,000 more among those who have never bought one," said H. P. Branstetter of the KisselKar, recently.

"While I have never seen any reliable statistics on the subject," he continued, "I have heard it said, and I think fairly, that fully forty per cent of car buyers have owned cars previously. The man who has driven an old-fashioned heavy car wants a lighter one. He who has driven a small, low-priced car wants something bigger and better as soon as he becomes accustomed to the 'feel' of the road. Wives and daughters insist upon keeping abreast of the styles in cars as well as clothes.

"Kissel's invention, the All-Year Car, came out a little more than two years ago. In the course of a few months it depreciated the value of every car not offering the convertible feature. The idea of motoring in all seasons is spreading fast and it will not be long before a car without a winter top will be in the 'has been' class.

"The same is true of other radical and practical improvements. Buyers will have the up-to-date thing and that is why so many purchasers are 'repeaters.'"

### Maxwell Is Hill Climber.

A Maxwell, driven by Ben F. Durham, was the sensation of the Giant's Despair Hill Climb, October 7. The Maxwell was the lightest car entered, but in the various events it won two firsts, two seconds and a fourth.

Durham's car looked a good deal like a scared rabbit in its flight up the perilous slopes of Giant's Despair. Part of the time all four wheels were off the ground, but the pilot took all turns at terrific speed. The car was easily the favorite among the crowd of 60,000 spectators. Durham and his car added to their honors by making the third best time of the day, making the distance in 1:45 1-5, this time being only a few seconds slower than that made by larger and more powerful opponents. After the race, the Maxwell car was taken to Philadelphia, where it was placed on exhibition in the branch store there.

### Some KisselKar Mileage.

Joseph J. Bins of Green Bay, Wisconsin, steps forth with a worthy contribution to the plethora of testimony on "where the old cars go." Mr. Bins says he has driven his old KisselKar 216,024 miles. "Up to the present," he adds, "no valves have been ground and the motor is running as smart as ever."

# Auto Accessories and Garage Equipment

## Adjustable Tire Carriers.

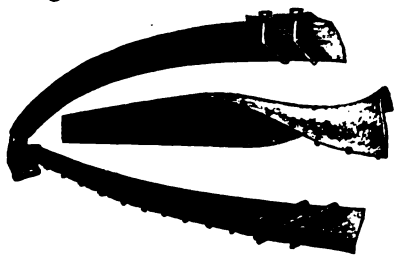
The International Stamping Co., Chicago, is getting out a new cradle-type tire carrier for the 1917 season. The special feature is its adjustability, the purchaser always being sure of a fitting for his tires, whether it be simply the plain casing or Nobby tread on demountable.



For the 1917 season, the adjustable carrier will be made only in the 3½ and 4-inch sizes for the Ford and Chevrolet 490, the Simplex and Duplex types being made as heretofore for other sizes and makes of cars. The International Company also will make metal covers for use with the adjustable tire carriers, the covers protecting the tires and giving a finished appearance to the adjustable carriers.

## Woodworth Spring Cover and Lubricator.

Leather Tire Goods Company, Niagara Falls, N. Y., is finding a ready market for the Woodworth Spring Cover and Lubricator. It laces over the springs completely enclosing them, preventing any danger of moisture or dirt getting between the leaves. The cover is lined with a felt wicking which is saturated with oil before the cover is put on and will hold enough oil to lubricate the springs for at least 100,000 miles of running.



The covering is laced on through hooks, making it possible to put it on very quickly and easily.

The covers enable one to obtain more perfect spring action than can be had in any other way. They make a very smooth and neat appearance on the springs and do a great deal to prevent

broken springs. Every one has noticed how much better a new car rides than an old one. This is chiefly because the springs are perfectly lubricated. The Woodworth Spring Covers and Lubricators will keep the springs perfectly lubricated throughout the life of the car and are less expensive than shock absorbers.

## Old Sol Nitrojector No. 100.

Hawthorne Manufacturing Company, Inc., Bridgeport, Conn., will soon put their Nitrojector on the market. This new light is destined to make a sensation when claims for it have been verified by the trade. It is built to conform to all state laws, but apparently has the ability to make signs legible a thousand feet away. As proof of this it is noted that a person can look directly into the light and instantly afterward read fine print without eye strain.

The Nitrojector is made to be used with any voltage bulbs. The nitrogen lamps of six to eight voltage are the most commonly used on the lighting systems of cars today and bulbs for this voltage supplied with the Nitrojector when sold. Not only in seeing the road signs, picking out objects on the road in the path the car must take, but which the headlights do not disclose, backing into the garage, turning around in narrow roadways, but in protecting the driver against the glare from passing autoists, is the value of a windshield spot light made more and more apparent.

With the Nitrojector is supplied a very finely made diminishing mirror, a most handy equipment for the auto driver during the daytime, especially in the city. This is an added safety device, which in one state at least is required by law.

The Nitrojector is made of pressed steel, is black enamelled with three baked-on-coats, and is equipped with a patented universal joint that the manufacturers guarantee can be instantly adjusted to take up wear, and so can never become loose. The Nitrojector sells for \$10, fully equipped with mirror and six feet of duplex cable and terminals.

## United Motors Buys Klaxon.

Lovell-McConnell Manufacturing Company, Newark, N. J., maker of Klaxon horns, has sold its plant to United Motors Corporation. The name has been changed to Klaxon Company, under direct management of the United.

## Permalite Corporation.

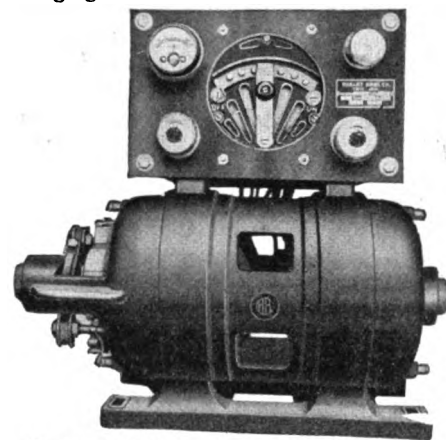
Union Motor Device Company, Indianapolis, Ind., has changed its name to Permalite Corporation and increased its capital stock to \$100,000 from \$20,000.

## HB Battery Charging Set.

Hobart Bros. Co., Troy, Ohio, are sending out a line of very convincing arguments, showing the profit in using its HB battery charging set.

Part of the argument is that the HB set will charge from one to six auto starting and lighting batteries at the same time. The average current cost is 10c per battery. Seventy-five cents to \$1.50 is the average amount received for charging a battery. This means a profitable business when six batteries can be charged every ten hours. Different voltage batteries may be charged at the same time, due to special automatic voltage control in the generator.

Battery charging with the HB set is very simple. Connect on the batteries, turn the switch, and forget about them. Battery service has a big "comeback" that is growing daily. It is a service that pays well to push. The HB set capacity is 11 amps—42 volts varied by the number of batteries charging.



S. K. F. ball bearings and low operating speed of 1,200 insures absolute freedom from bearing trouble. The HB set is furnished complete with switchboard ready to connect to city current line and operate. These machines are sold on the easy payment plan and HB users claim that their battery charging profits each month considerably more than take care of the small payments, making the outfit pay for itself while they use it. For prices and further information write Hobart Bros. Co., Troy, Ohio.

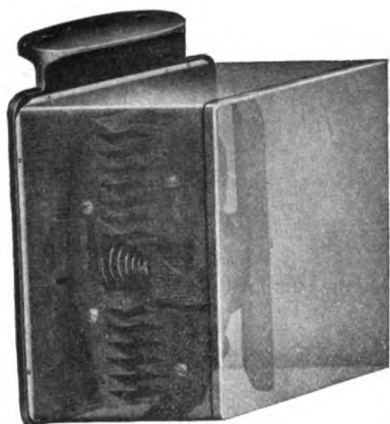
## A. C. Holding Pressure Ring.

The A. C. Piston Ring Co., Compton, Ill., soon will begin marketing a new holding pressure ring which it is believed will take the trade by storm. Details of construction are withheld, but it is known to be a single-piece individual cast ring and will retail a little higher than the common ring now in use. The sales and marketing will be in the hands of a manufacturer's sales agent.



### Description of Equi Light.

The Equi Light Company, Paducah, Ky., finds its Equi outfit delivers four times the candle power of the regular Ford light equipment at six, eight and ten miles per hour. The Equi weighs only two pounds, is inexpensive, does not overload the magnets as it utilizes only the current flow, prevents the lights getting too strong at high speed and outlasts the car.



The Equi is a reactance coil with a variable gap in its magnetic circuit, and is actuated entirely by the current. It regulates the current supplied to the lights upon the Ford magneto. It is arranged to work the lamps in parallel, and by a proper selection of lamps, as we have made, they burn up to a very nearly full candle power when the car is running at slowest possible speed. This is due to the fact that at low speed the gap in the magnetic circuit of the Equi is open, and the inductive or resisting effect of the coil of the Equi is negligible, being limited to the ohmic resistance of the wire constituting the winding of the coil. This resistance occasions a loss at low speed of less than  $\frac{1}{4}$  volt, an amount not appreciable, especially since selected lamps are used that cause the effect of this slight loss to disappear entirely.

At the slowest possible speed the lights are as good as could possibly be desired.

### Armstrong Tube and Kohn Automatic Valve.

Under-inflation is the cause of one-half of all tire troubles and over-inflation accounts for a good share of the other half. The Armstrong Rubber Company, Inc., Newark, N. J., has a remedy for both under-inflation and over-inflation in its Armstrong tube fitted with the Kohn automatic valve.

Following are the claims set forth for this combination:

1. Maintain original pressure — no leaks.
2. Can be inflated to any desired pressure without the use of the gauges or accessories of any kind.
3. Will warn you when a desired pressure is reached.

4. Do not have to be watched when a power pump is used, for fear of over-inflation.

5. Will register the pressure in a tire without the use of a gauge.

6. Cannot be inflated beyond the pressure desired.

7. Do not allow air to escape when pressure is increased while running.

8. Will give you thirty per cent more mileage from your tires by keeping them properly inflated.

9. Are made of the best pure rubber obtainable.

10. Will outlast any other tube at the same price.

11. Cost no more than ordinary tubes.

### Brunswick Skid-Not Tires.

The Brunswick-Balke-Collender Company believes that there is room for a genuinely good motor car tire, and has announced its entrance into the field, offering their tire on a square list with a definite mileage guarantee, a basis of five-thousand (5,000) miles, the 34x4 Skid-Not listing at \$22.40.

Brunswick tires will be distributed through their branches direct to garages and dealers. Distribution started October 1, 1916.



Brunswick Skid-Not Tires will be of the wrapped tread single cure principle, and mortised tread. The point of wear, in the middle of the tread is smooth, and contains the most tread stock. The depressions have sharp biting angles on the side of the tread, which prevents side slipping on wet asphalt, mud or sand, and with the special design of their depressions, will give the strongest traction, and do it without suction or loss of power. Brunswick Tires will be made in both Skid-Not and Plain Tread, Clincher Q. D. and Straight-Side Beads.

### Buy Miles Instead of Tires.

"We are carrying a campaign to motorists to influence them to buy tire miles instead of merely 'buying tires',"

says R. S. Wilson, Manager Service department, The Goodyear Tire & Rubber Co., Akron, Ohio. "To aid motorists in buying more miles we have prepared a very convenient 'Cost per Mile and Inflation Chart,' with the aid of which any car owner can in a moment calculate accurately just how much his tires are costing him to turn a mile.

"There is probably no form of automobile extravagance greater than that practiced in buying tires, and a great deal of this extravagance lies in the purchase of 'cheap' tires, some of them bearing a name you never heard before, and some no name at all. But car owners who study the tire question for themselves, are rapidly coming to know that the buying of these cheap tires is a waste of money—that in the end the well-made tire whose initial cost is a little more, will show the lowest cost per mile. This is the story the Goodyear chart tells. And in addition it contains interesting information about proper inflation—the most important requisite in tire service. It tells how to ascertain the proper inflation for your tires.

"An examination of inflation pressures recommended by six makes of standard tires for a four-inch fabric tire shows an average of seventy-two pounds. Now it is obviously unfair to ask the man with a 2,800-pound two passenger car to carry seventy-two pounds in his tire, and ask the owner of a 3,500 pound seven passenger car to carry the same pressure in his tires. The chart tells just how to find the proper inflation pressure for each individual car. Motorists may secure a copy of the chart from any Goodyear Service Station dealer."

### New Abbott Appointments.

Fred Berger has been appointed chief of the engineering department, and Alfred Thompson, factory and production manager of the Abbott Corporation, makers of the Abbott cars.

### American Hose Clamps and Grease Cups.

Two distinctly standard and well-advertised accessories are the hose clamp and grease cup lines of American Stamping Company, Battle Creek, Michigan. These products are used by factory specifications on more than half the automobiles made in the United States. That they are among the most saleable articles in an accessory stock is shown by the frequency they replace competing clamps and cups whenever new parts are needed.

The high-binders in the retail auto and garage business resent the era of law and order that is being introduced into the industry by the A. A. G. O. and the state and local associations.

### The Hydrovaporizer.

The following description from Accessory Manufacturing & Sales Co., Minneapolis, answers a number of inquiries regarding the Hydrovaporizer:

The Hydrovaporizer is designed with the view of performing four functions tending to eliminate motor troubles and to increase the efficiency of the motor.

Recent exhaustive tests have proved conclusively that one of the most detrimental elements to the smooth and efficient operation of the gasoline or kerosene motor is the deposits of carbon which constantly accumulate. These tests also proved that if the iron upon which the carbon was deposited, was heated to a high temperature, that by introducing water in liquid form and spraying this over the deposits, the carbon would be loosened so that air would readily blow it away. This is the only manner by which the tests showed carbon could be removed and kept from accumulating in the motor.

The water commonly found in the water jacket of different motors is dirty, full of sediment and very often has pieces of rubber or rust in it. Impure water of this kind should not be used in a motor for removing carbon. To eliminate these from the water, we equip each Hydrovaporizer with a scientifically constructed filter which takes out these impurities and enables us to deliver to the motor clean, clear, filtered water.

The outlet of our filter is equipped with a measuring valve of our own design which permits us to adjust the flow and definitely determine the exact number of drops of water that is to be used in the motor, whether it is being installed upon a four, six, eight or twelve cylinder motor. This enables us to give each cylinder the proper amount of water, as more water is needed by each additional cylinder.

The measuring valve is so designed as to permit the water to flow into the mixing valve, where the water is mixed with air and is sprayed through fine screens into the manifold to be carried into the combustion chamber of the motor where it is sprayed over any carbon that may be deposited there. This also prevents any further carbon from accumulating.

This valve also permits air to be taken in at the same time that the water is to be sprayed into the manifold and this air is very necessary for three reasons.

First: It carries the moisture quickly and accurately through the spraying screens into the manifold, where it is taken to the combustion chamber.

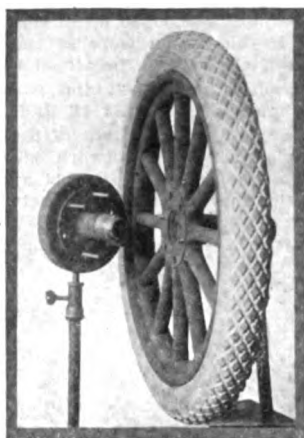
Second: This air greatly assists in blowing the carbon, removed by the water, from the combustion chamber.

Third: This air mixes with the gasoline vapor giving a more even mix-

ture which assists very materially in equalizing the compression over all cylinders. This causes uniform explosion of gas over the different cylinders, which gives you the maximum efficiency and makes a much smoother running motor than you have had in the past. Efficient motor operation gives you more power, less wear, more satisfactory riding quality and in a number of cases we have been able to increase the efficiency of the motor fifty per cent, thereby saving as much as one half of the gasoline consumed per mile. In the majority of cases, however, the increased efficiency of motors using the Hydrovaporizer has varied from ten to twenty-five per cent. The price complete is \$6.00. Accessory Manufacturing and Sales Company, 1415 Hennepin Avenue, Minneapolis, Minnesota.

### Standard Ford Demountable Wheel Set.

The Standard Auto Accessory Co., Leipsic, Ohio, at the request of American Garage and Auto Dealer, has summarized its claims for its Standard Ford Demountable Wheel set.



Standard Demountable Set.

It is a new invention, making a four-minute job of a tire change on the road. The cost is \$12.00, requiring but one extra casing. The set consists of one complete new wheel with rim, special plates of steel (one for each wheel) together with special bolts, nuts, etc., for converting the four wheels already on car into demountable wheels. The wheel furnished is 30x3—same as original front wheel of Ford. It is to be fitted with 30x3 casing. It is interchangeable, each wheel will fit any of the hubs. The outside diameter of the 30x3 Ford wheel with tire is just the same as outside diameter of 30x3½ with tire; so in putting it upon rear hub the driving radius remains just the same and differential is not the leastwise affected.

The purchaser of this set can make the change in his wheels himself, with simply a wrench and a half round file as the only tools necessary. Time re-

quired, about one hour to one and one-half hours. Thereafter, any wheel can be changed in four minutes, without soiling hands, as it is not necessary to touch dirty tire—as in taking off demountable rims—and without puffing and sweating because of “sprung” rims that do not fit all wheels. Ask any man who has driven a car if his spare demountable rim fits all his wheels without forcing, after he has driven car a few months. Not one rim in ten will go on or off without a lot of pounding and prying.

### Moreland Gasifier and Truck.

“Moreland makes a dollar go farthest,” is a motto the Moreland Motor Truck Company, Los Angeles, Cal., is making good on the Pacific coast. The trucks are made in ton, ton and a half, two and a half and four ton capacities, with specifications varying only to accommodate the different loads.

All are fitted with the Moreland Gasifier and worm driver. The Moreland Gasifier is made of cast iron to give it a heat-holding capacity. The exhaust and intake manifolds are cored through an outer shell, which completely envelopes them. Fresh air is drawn through holes drilled in the top of this outer shell, directly upon the exhaust manifold, and this air, now heated, is drawn down into the air intake of the carburetor, heating the intake manifold at the same time. The fresh warm air readily vaporizes the distillate, and the resulting mixture is carried through the heated intake manifold, entering the combustion chambers a perfectly mixed dry gas. The combustion is therefore practically complete.

On account of the Moreland Gasifier producing a warm, dry gas, less carbon is formed than in ordinary gasoline motors; more power is generated and more miles per gallon are secured. Distillate can be used successfully as a fuel for motor trucks only when some means is employed to perfectly gasify it. So far no appliance has been invented to accomplish this except the Moreland Gasifier, which is used exclusively on Moreland Distillate Trucks.

### The U-Auto-Washer.

The U-Auto-Washer Co., 19 Morgan street, Chicago, has on the market a hydraulic brush washer which will clean mud and dirt from any part of a car on which it lodges. The brush is in a U shape around a metal tube permitting a free flow of water. No metal part can touch the car and the brush need not be turned. The water control is at the finger tips, the manufacturers claiming the cost of their U-Auto-Washer is saved yearly in water alone. The device retails at \$3.50. The only part that can wear out is the brush, which can be replaced for \$1.50. Each brush is figured to do the work of ten pounds of sponges.

### Fenders for Trucks.

The ordinances of some few cities provide that fenders shall be attached to all trucks driven on the public streets, and ordinances are pending in many other cities, notably Chicago, which will require the use of fenders that will protect and safeguard life and limb. Therefore, the Melio patent becomes of general interest and is herewith described.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which:

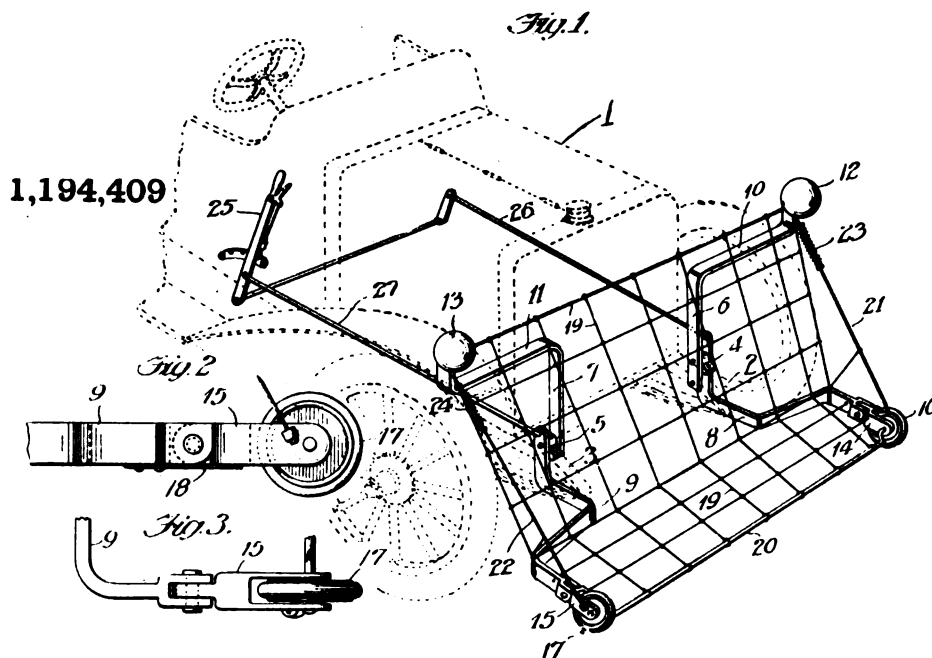
Figure 1 is a view of the complete device in perspective, shown attached to the front of an automobile. Fig. 2 is an enlarged side elevation of one of the yieldingly mounted tips. Fig. 3 is a top plan of the same.

In the construction shown in the drawings the fender is attached to the front end of an automobile 1, of standard construction, preferably to the forwardly projecting arms 2 and 3 of the chassis, by means of clips 4 and 5 secured to the chassis by bolts or other suitable means.

The framework of the fender comprises a pair of upstanding, rigidly mounted arms 6 and 7 and a pair of pivotally mounted forwardly projecting arms 8 and 9. Arms 6 and 7 are offset outwardly near the tops thereof, forming horizontal parts 10 and 11 which extend outwardly as far as the outer edge of the mud guards so as to serve as a protection therefor. The outer tips of said arms are bent upwardly and are surrounded by bumpers or shields in the form of rubber balls 12 and 13. The arms 8 and 9 extend forwardly and somewhat downwardly and are offset in a manner similar to the upstanding arms 6 and 7. The outer ends of the arms 8 and 9 are provided with pivotally mounted tips or extensions 14 and 15, carrying rollers in the form of small wheels 16

and 17 in contact with the ground. The upstanding and forwardly projecting arms form a framework over which a network 19 is stretched, the lower front edge of the network being attached to a bar 20, mounted at its opposite ends on tips 14 and 15. The network 19 is arranged so as to form a slightly sloping back part and a substantially horizontal floor part, the whole being approximately L-shaped in side elevation. Strands 21 and 22 are connected from the ends of the upstanding arms to the yieldingly mounted tips on the forwardly projecting arms, said strands having coiled springs 23 and 24 interposed therein, so as to allow the tips to rock downwardly when an object is supported by the fender. The hereinbefore described arrangement of framework and network forms a fender somewhat resembling an outwardly facing basket. The main purpose, however, of having the side strands 21 and 22 resilient is to cause objects struck by them to be either thrown clear of the vehicle or into the network basket. The arms 8 and 9 and the network supported thereon may be swung upward out of the way by suitable means, such as an operating handle 25 connected by links 26 and 27 to said arms.

In the operation of the device, the forwardly projecting arms 8 and 9 may be lowered to the position shown in Fig. 1 by means of the operating handle 25. In this position, the wheels 16 and 17 are a few inches from the surface upon which the vehicle is traveling. If a person or other object were to be run into, he would be scooped up in the network basket. If the person were at the side of the path of the vehicle, he would be struck by the resilient strands 21 and 22 and possibly by the rubber balls 12 and 13, and thereby be caused to fall out of the path of the vehicle or into the network basket. The yielding mounting of the tips 14 and 15 allows the lower front edge of the network and the cross bar 20 to yield under a load, bringing the wheels 16 and 17 into contact with



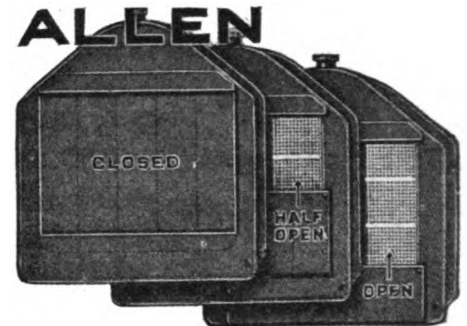
and 17 respectively. The pivotally mounted tips 14 and 15 are held in substantial prolongation of their respective arms by means of resilient leaf springs 18 rigidly mounted at one end on the arms, the other end of each of said springs being in position to yieldingly support the tips, while allowing them to rock downwardly to bring the wheels

the ground and enabling the arms to readily pass over projections, etc.

Although but one specific embodiment of this invention has been herein shown and described, it will be understood that the construction may be altered and details omitted without departing from the spirit of this invention.

### Allen Radiator Cover.

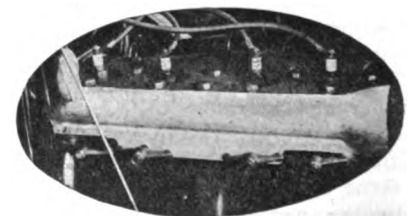
The Allen Auto Specialty Co., 1926 Broadway, New York City, and 1627 Michigan avenue, Chicago, is making a seasonable campaign in pushing the sales of its Allen Radiator cover. The illustrations show the front opening of the three positions as used:



The Allen radiator cover is made of fabric leather and a good quality of robe plush. Also of enamel duck in colors if desired. The flap of the cover is held in its different positions by ball and socket buttons. The flap is closed, covering the radiator entirely when the motor is not running. The half open position is used when the motor is running in very cold weather and the open position when the motor is running in moderate weather.

### Brickey Patent Heater.

Thurston Auto Supply Mfg. Co., 3020 Michigan avenue, Chicago, are finding a ready sale for the Brickey Patent Heater. It is the invention of a South Dakota salesman, who turned his icy trips over the prairies into the comfortable temperature of a steam-heated flat.



The invention is simplicity itself, combining the use of the hot air from the manifold for a front heater and from the exhaust pipe for a rear heater. The hot air is forced into both heaters from the fan and is circulated through tubes and a footplate register for the front and through a register in the back of the front seat for the rear heater. The cost is less than \$9, and of course none for fuel.

### Blackstone Motor Company.

The Blackstone Motor Company, \$100,000 capital, with plant in Momence, Ill., will market an assembled \$845 car. Sales will be handled from the Chicago office.

## MILEAGE GALORE

**Will Run 5,000 Miles and More**

These tires are of double thickness and have 12 plies of fabric; therefore no punctures, no blow-outs. They are rebuilt by our special process, vulcanized and double treaded.

30x3 ..\$4.50	32x3½..\$5.75	34x4....\$7.75
30x3½.. 5.50	33x4 .. 7.50	36x4.... 9.00

Other sizes in proportion. Write for prices today. Send \$1 deposit for each tire ordered, and we will send the tire, balance C. O. D., subject to your examination and approval before paying for same.

**CHICAGO DOUBLE TREAD CO.**

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## KENNEDY Auto Storage Covers

furnish efficient protection for cars in dead storage. They are made of strong, heavy paper, properly reinforced, and in standard sizes to fit any car.

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## SHALER Tire Repair Outfits

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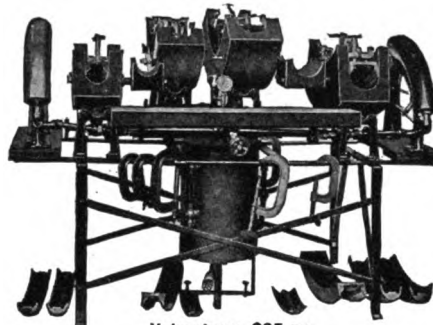
Does better work than the big, high-priced vulcanizing outfits costing 3 to 5 times as much, and does it at lower cost. A boy can use it. It's the only vulcanizer that has Automatic Heat Control, and, therefore, can't undercure or overcure a tire. No watching or regulating. Steam or electric heat.

### Write for Catalog

Send at once for the new Shaler catalog, the most complete Vulcanizer Catalog ever published, and ask for the low discount price of the Shaler Tire Repair Outfit. We will also send repairemen our book, "Common Sense About Tire Repairs," on request.  
C. A. Shaler & Co., 361 Fourth St., Waupun, Wis.  
The Largest Manufacturers of Vulcanizers in the World



## BIG MONEY DOUBLE TREADING

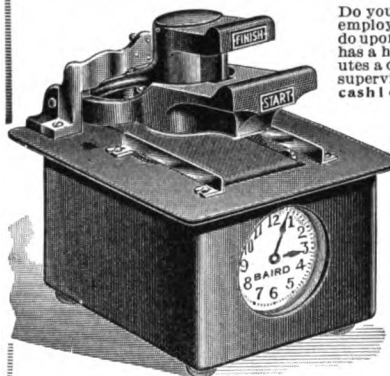


Lots of Work. Vulcanized Double Treads wear better, look better. This Vanderpool Vulcanizer does double treading and repairs all size case and tubes from 3 to 5-inch.

Vulcanizers \$25 up

**VANDERPOOL CO.,** SPRINGFIELD, OHIO  
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Do you keep as careful a check on how your employees spend their valuable time as you do upon your cash? WHY NOT? Their time has a high cash value to you. A few minutes a day lost through lack of automatic supervision soon adds up into a heavy cash loss.

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**Time Recorders**

are as important in time checking as the cash register is in cash checking. They relieve high-salaried foremen of much unnecessary supervision—they keep your workers up to top-notch production—they weed out the "drones."

Time Recorders, Stamps, Clocks, etc., for every timing purpose. Moderately priced. Write us today.

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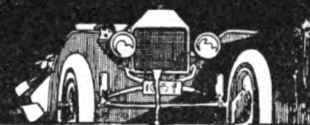
322 W. Ohio St., Chicago  
Phone Superior 2071

## KEEP YOUR BOLTS WHERE YOU CAN FIND THEM



"KEEP YOUR BOLTS, SCREWS AND OTHER SMALL PARTS WHERE YOU CAN FIND THEM AND WHERE THEY WILL BE PROTECTED FROM DUST AND RUST, IN **AMERICAN REVOLVING CASES**, MADE OF HIGH GRADE MATERIAL AND A VARIETY OF SIZES. WRITE FOR CATALOG."

**AMERICAN BOLT AND SCREW CASE COMPANY**  
DAYTON, OHIO.



## RADIATOR CURE STOPS LEAKS (IS NOT MADE OF CORNMEAL)

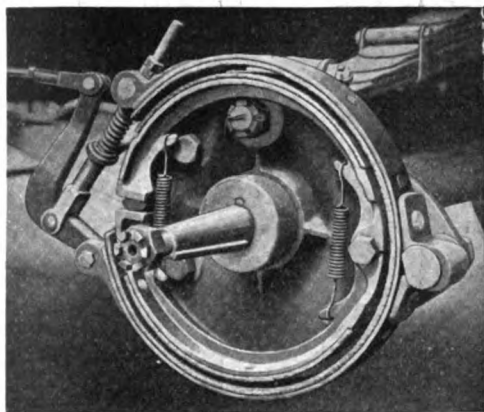
"Attractive" dealers' proposition for representing us. Write for particulars.

**The M. W. Dunton Co.,** PROVIDENCE, R. I., U. S. A.

Patronize our advertisers and build up your Association and Journal

### A. C. Brake For Ford Cars.

The A. C. Manufacturing Company, 2047 W. Chicago Ave., Chicago, Ill., has come out with a binding guarantee which will attract the attention of the trade. The guarantee is on the A. C. brake for Ford cars and covers 100 per cent. overloading without damaging the rear axle and that all stops shall be free from chattering and grinding and shall be absolutely noiseless.



The A. C. brake is a foot and service brake on the outside of the rear wheel emergency brake drum and connects with the original foot-brake pedal by loosening the foot-brake band and leaving it therein. Users of the brake declare it eliminates all bearing, transmission, driveshaft and rear axle troubles. Using the A. C. brake with the Ford foot-brake pedal, delivers all the braking power direct to the rear wheels and relieves all the strain on any mechanical part of the car when applying the brake.

Full particulars may be had by addressing the company at the address noted above.

### Two Good Gasoline Feed Tests.

The Church Gasoline Feed recently had two tests which show it is equal to maintaining a proper flow of gasoline under the most disadvantageous conditions. F. E. Edwards of the A. A. A. technical committee conducted the tests. In the first test a Mercer Roadster, Model 22-70, fitted with a Church Gasoline Feed was driven a distance of ten miles in a total elapsed time of 0:27:58.4, an average speed of 75.4 miles per hour, with a maximum speedometer reading of eighty-four miles per hour. At the end of the test the Church auxiliary tank was found to be full to the top, proving that with this new system and a proper carburetor adjustment, it is now possible to give the motor all the gasoline it will take, thereby assuring maximum motor efficiency at all speeds.

This test marks a big advance in motor efficiency both for speed and ordinary touring service. The average motorist is inclined to blame the car-

buretor for all engine troubles, when in the great majority of cases the fault lies in spotty or poorly regulated gasoline feed. These difficulties have now been overcome. Like other devices of the kind produced during the last few years, Church Gasoline Feed employs in addition to the regular full tank, an auxiliary tank located on the dash or other convenient place from which gasoline is fed directly to the carburetor by gravity. This, however, is the only point of resemblance between the Church system and others. The Church Auxiliary Tank is kept filled by an ingenious check valve mounted usually in place of the petcock on the rear cylinder which supplies the necessary pressure for the transfer of gasoline from one tank to the other.

Immediately after this test, and in order to demonstrate the wide margin of efficiency which this new feed system affords, a Jeffery Six touring car was fitted with a mast on top of which the Church Tank was installed so that the tank was ten feet, nine inches above the level of the main tank. With the Church Auxiliary Tank empty, pressure relieved from the main tank and the engine dead, it required only 14.4 seconds to get fuel into the auxiliary tank after the engine was started, at the end of which time the pressure indicator showed  $1\frac{1}{2}$  pounds to the square inch.

### Black Diamond Radiator Cure Stops Leaks.

Black Diamond Radiator Cure is a leaky radiator cure that results have proved, it is said, to be the most efficacious preparation of its kind on the market.

Black Diamond Radiator Cure is not made of corn meal.

It is put up in homeopathic doses, so that the pumps of an automobile will not become clogged. One dose is usually sufficient to cure quite a large leak, but if one does not cure the leak within one-half hour, another dose may be applied within a reasonable length of time, until five doses have been used. And, it is said that if five doses will not cure the trouble or leakage, nothing will. The instructions for using it are very simple:

Run the car until the water in the radiator gets hot, then pour the contents of one package into the filler cup; start the engine and keep it running for fifteen minutes—long enough to sufficiently circulate the water and create pressure to force the compound into the leak. In the event that the construction of an automobile is such that the radiator does not become readily heated, then it is suggested that the water be turned out first and a tea kettle of boiling hot water be inserted, then the dose applied, aft-

er which another tea kettle of boiling water is added. Then the car is to be run for fifteen or twenty minutes to give circulation. This operation it is said will stop leakage.

Under ordinary conditions a 25-cent dose will cure the most persistent leak.

Black Diamond Radiator Compound was formerly known as the "Field Radiator and Boiler Compound" compounded to repair leaks in hot water and steam plants. Mr. Field, the originator of this compound experimented with it for ten years and then his nephew put it on the market for some years longer. The M. W. Dunton Co., of Providence, R. I., recently purchased the formulae and right to put it on the market, and is desirous of securing some reputable garagemen and automobile dealers to act as distributors in a few territories which are still available. Particulars upon request.

### Flota Mica Sales to Be Pushed.

Mr. Chas. S. Kinnison, formerly Western advertising manager for The Blast Furnace and Steel plant, has been appointed general sales manager for the Flota Mica Sales Company, with offices at 1201-2-3 Kresge Building, Detroit, Michigan. The proved efficiency and remarkable demand for Flota Mica as a lubricant has necessitated expansion involving a sales organization for the purpose of exploiting Flota Mica throughout the world.

### Beach Process Bushing Press.

The Greb Company, 196 State street, Boston, Mass., is general sales' agent for the Beach process bushing press. In actual practice, this press makes bushings as good as new, better than new, some users claim. At present, ninety



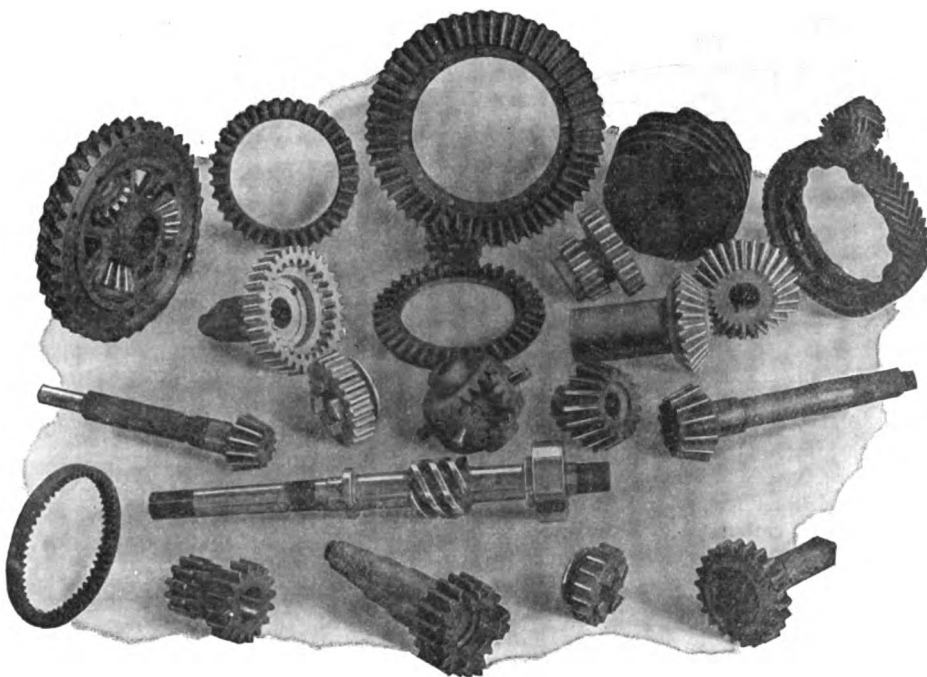
per cent of worn bushings are thrown on the junk heap. Approximately one-fifth of the cost in overhauling a car goes into bushings. It appears to be a mathematical demonstration that the repair man should use a bushing press when his waste on junked bushings amounts to enough to pay for the press. The Beach press is guaranteed for a year and costs \$100, less 25 per cent, f. o. b. factory.



# WILLIAM GANSCHOW COMPANY

## GEARS for Automobiles Our Specialty

**Y**OU DO NOT HAVE TO LAY UP YOUR CAR and send to the manufacturers for repair parts or replace gears, as we are prepared to furnish promptly transmission, differential or timing gears, and any other part made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or Foreign manufacture. Workmanship and quality guaranteed.



WASHINGTON BLVD. AND MORGAN STREET - CHICAGO, ILLINOIS

## This Sign Means Big Profits

To give your customers real satisfaction—To replace springs in the shortest possible time—To make good profits with little work—use

**HIGGINS QUALITY  
SPRINGS**  
Used for Replacements

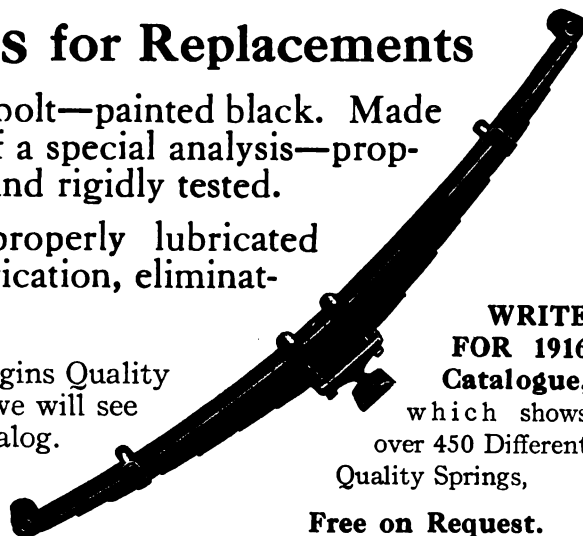
### Higgins Quality Springs for Replacements

They are guaranteed—made without center bolt—painted black. Made from best grade of motor car spring steel of a special analysis—properly heat treated, scientifically constructed and rigidly tested.

Equipped with Rebound Clips—leaves properly lubricated with a special high grade spring leaf lubrication, eliminating "squeak"—preventing rust.

**ASK YOUR SUPPLY HOUSE** for Higgins Quality Springs if they do not handle them. Write us and we will see that you are supplied. Be sure and ask for our catalog.

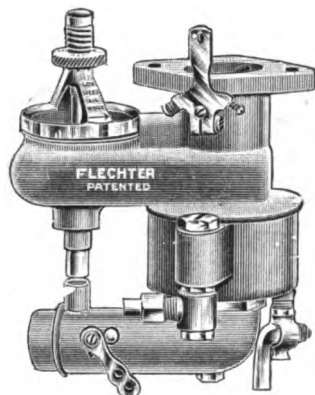
**Higgins Spring & Axle Co., Racine, Wis.**



**WRITE  
FOR 1916  
Catalogue,**  
which shows  
over 450 Different  
Quality Springs,  
**Free on Request.**

### The Flechter Carburetor.

The Flechter carburetor, made by L. V. Flechter & Co., 245 W. 55th St., New York City, has become a standard in the trade, being one of the few survivors in a vast grave of carburetor hopes.



The success of the Flechter carburetor is laid to the fact that it is made in single and double jet types and each is made and sold to fit a distinct type of motor.

In the Flechter carburetor a "fixed" nozzle, or spray, is employed. The orifice of this jet is calculated for the size of the carburetor and the type of motor on which it is to be employed, and is unalterable, the only adjustments necessary being to the air supply. Motor characteristics vary to such an extent that no one design—no "stock" carburetor—can give the highest efficiency on any and every motor.

The amount of gasoline that will pass through a certain orifice under any given pressure is a simple matter of calculation. Likewise the vacuum that any given motor will develop at the carburetor nozzle at any speed within its range is readily calculated, and both of these factors have been verified by innumerable tests and experiments. Given proper design as a basis, there is consequently no necessity for any variation of the fuel supply, other than that which automatically takes place with variations in the speed.

Of the two variables for which an efficient carburetor must compensate in the operation of the motor, i. e., fuel and air supply, the latter is the more important. Only the oxygen that the air contains is of value in the combustion of the fuel, and as this forms but a small part of the total, a correspondingly greater volume must be introduced to insure the proper combustion of the increased amount of gasoline.

### Handy Small Parts Cases.

The American Bolt and Screw Case Co., Dayton, Ohio, has gone far toward solving the exasperating garage problem of misplacing and losing bolts, nuts and other small parts.

The revolving screw cases made by this company are standard in the trade and several have been adapted to the use of small parts used in garages. The cases are made in many sizes and shapes, there being at least one to meet the requirements of any garage.

All the cases are made to withstand not only use but abuse. Each part is made of a strength commensurate with three times the weight it ever will be called upon to hold. The bottoms of the drawers are double, with the grain of the wood crossed, are glued and screwed together and braced with iron rods. The very best of seasoned lumber is used in the construction, each case being built with a view of lasting a lifetime.

The proper case for use in any garage can be learned by writing the American Bolt & Screw Case Co., Dayton, Ohio.

### Auto-Reel-Spot-Lite.

Mechanical Utilities Corporation, 5 North La Salle St., Chicago, is finding a good and growing market for its Auto-Reel-Spot-Lite.

This Spot-Lite is constructed along the same lines as other various makes of lights with this additional feature: immediately in the rear of the shell there is a knife switch behind which the metal flares out to the mirror holder which contains a magnifying mirror three inches in diameter. From the bulb of the light in the reflector, the cord passes down through the goose neck, acting as support, into a round receptacle containing the reel which is really the feature of this particular light.

The reel contains fourteen feet of cord and is drawn back into the receptacle by means of four springs, each one acting independently and in an opposite direction from the other, resulting in a lessening strain on cord when the entire fourteen feet is drawn out. In other words with this spring feature, the tension is very little greater when fourteen feet of cable is pulled than when there is but four or five feet uncoiled. The entire outfit is fastened to the wind shield or upright support in like fashion as various other spot lights are attached.

Spot-Lite has the universal swivel enabling the light to be thrown in any direction, except that it cannot be turned completely around as this would result in the possible severance of the wire.

When Spot-Lite is to be used for inspection purposes or as termed "trouble light," it can be disconnected by turning a flanged nut holding the goose neck of the lamp to the reel receptacle by a ground joint. It takes but a moment to do this without the aid of a tool, when the lamp can be carried to any portion of the car.

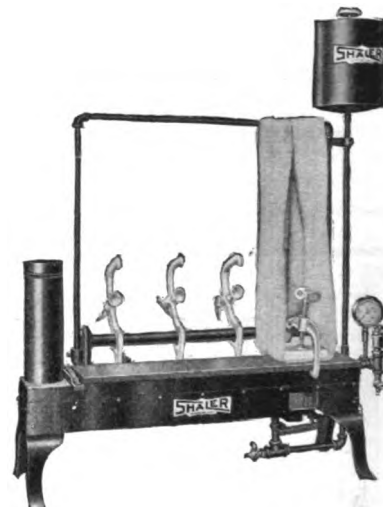
### New Breaker Mechanism.

Pittsfield Spark Coil Co., Pittsfield, Mass., defines its newest device as a breaker mechanism for an ignition distributor in which both the make and the break are positive mechanical operations, neither depending upon the ra-

pidity of action of the spring. The idea is a new one and the positive action already has appealed to many manufacturers and car owners. The distributor coil and condenser may be conveniently removed in one piece, uncovering the interrupter mechanism for adjustment and at the same time showing up a set of complete printed instructions for operating the same. The manufacturers are at present prepared to furnish this igniter for four, six or eight-cylinder engines, and they will shortly be in a position to supply a twelve-cylinder distributor.

### New Shaler Vulcanizer.

Four tubes at once or a single repair two feet long is the capacity of this new model vulcanizer just being marketed by C. A. Shaler Co., Waupun, Wis. Although listing at only \$25 (subject to trade discount), it has the essential and well-known Shaler feature of automatic temperature control so that the operator is spared the necessity of watching it while it operates.



Model No. 40, as it will be known, is designed to stand either on the floor or on the work bench, the machined tube plate being nine inches above the base. Heat is supplied by a gasoline or gas burner which generates steam to vulcanizing pressure in only fifteen minutes. No attention is necessary after starting, a thermostatic damper automatically regulating the intensity of the heat and holding the correct steam pressure as long as the burner operates. Steam gauge and safety valve are provided in addition. One of the leading features is the clamping device, the clamps being movable to any part of the machine, yet so easily adjustable that a tire can be put in place with one hand.

Every garageman and auto dealer should handle at least two cars—one low priced and the other medium or high-priced. In adding a third, put in the one needed to complete the triplicate battery of cars that will enable the buyer to fit his pocketbook.



**T**HESE illustrations show why the Gill Rings have already achieved such a remarkable success. The interlocking joints create a barrier past which the vapor cannot escape. This is not only true of new cylinders, but old ones as well. The ring is self fitting and adjusts itself to wear, even tho' the cylinders are worn as much as .031 it forms a perfect seal.

The Gill Ring combines all the advantages of the multiple piece rings with the strength, sturdiness and ease of application of one piece rings, making an ideal combination which is not equalled by any other ring on the market.

**Order from our nearest Distributing Offices**

BOSTON—83 Massachusetts Ave.  
BROOKLYN—36 Woodruff Ave.  
CINCINNATI—816 Union Central Bldg.  
CLEVELAND—819 Sweetland Bldg.  
DETROIT—706 Union Trust Bldg.

**The Chalsmith Co.**  
3701 So. Ashland Avenue  
CHICAGO, ILLINOIS

LOS ANGELES—325 Baker-Detwiler Bldg.  
MILWAUKEE—811 Majestic Bldg.  
MINNEAPOLIS—Decorah Bldg.  
SO. NORWALK, CONN.—80 Woodward Ave.

## The "Six-in-One" Dry Storage Battery

# VENUS

**Equals Six Dry Cells on Every Charge**

**Non-Leakable**

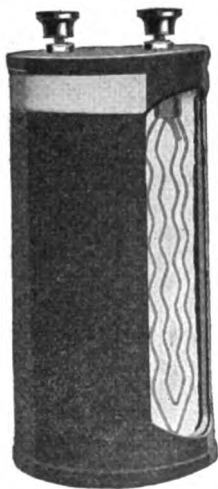
**Non-Spillable**

### Lighting

Automobiles  
Miners' Lamps  
Motor Boats  
Flashlights  
Christmas Trees  
Country Homes  
Fishing, Camp-  
ing, Hunting

### Power

Automobile  
Starters  
Motor Boats  
Electric Trucks  
Street Car and  
Railway Systems  
Telephone  
Systems  
Meter Testing  
Ignition Systems  
of all kinds  
Electric Toys  
Dental  
Instruments  
Massage  
Machines



\$2.50

### Dealers and Garagemen

A few reasons why  
the Venus Dry Stor-  
age Battery should  
be handled by you.

It gives 40 per cent  
more efficiency  
than the common  
wet battery.

The Venus Battery  
answers every  
purpose, be it for  
lighting an ordi-  
nary bicycle lamp  
or propelling a  
five-ton truck.

Each Venus  
Battery can be  
recharged hun-  
dreds of times.

Write for Dealers'  
Proposition.

We still have some  
territory open.  
You may be the  
lucky man.

**Venus Electric Lamp Company**

64 Second Ave.

DETROIT, MICH.



# Edison

**Alkaline  
Lighting  
and  
Ignition  
Batteries**

**Batteries and Supplies**  
carried in Stock at our

## Service Station

Every Garage Owner should have information  
about the Edison Battery on his desk.

Write us.

**EDISON STORAGE BATTERY CO.**  
Orange, N. J.

Chicago Address: 2025 Michigan Avenue

**A. A. G. O. Field Notes.**

**A. P. Meng, Pennsylvania**—Reports good business and that a large majority of those called on are strongly in favor of organization and co-operation. Gets 'em wherever he goes.

**A. Garrison, Ohio**—Reports business good in spots because of another "so-called" association's mixing the issues. He attended the Ohio state convention at Columbus last week.

**W. H. Powell, Kansas**—Used bad judgment in trying to climb a telegraph pole with the new "flivver" he recently purchased and in consequence is laid up at Leavenworth.

**Glen Smeeman, Colorado**—This "bird" started off like a race horse at the beginning of the month, but dropped by the wayside. Where is that big bunch of new members you promised, Glen? Come through with them.

**H. Montgomery, Dixie Highway**—Is sojourning in Chicago this week while the Chalmers service department is tuning up his "big six" preparatory to "hitting the high spots" on his way south.

**R. T. Bonnell, Alabama**—Has not been on the job for a couple of weeks, owing to sickness in his family. Here's hoping things are on the mend and that he will soon be at work again. Has done big work in Wisconsin and Indiana.

**W. B. Edwards, New York**—Went to Cleveland last week for an operation on his nose. Reports that he will be on the job again next week. First work will be done at Buffalo.

**O. Q. Holman, Illinois**—After spending most of his time in Chicago and vicinity lately, made a trip downstate this week. He reports that it is hard to find a town where the "live ones" are not already A. A. G. O. members. Turned in a nice bunch of new members, however.

**H. Lancaster, Massachusetts**—Moved his headquarters this week from Boston to Springfield, a more central location. A hustler and will give New England good representation.

**H. E. Rider, Wisconsin**—Made a short business trip into Michigan. Hurry back, Brother Rider; those Wisconsin "boys" are anxious to see you.

**E. G. Soh, Wyoming**—Has had a very good month, though he seems to be in rather lean territory just now.

**G. A. Williamson, Nebraska**—Came home to Chicago to vote with a pocketful of all kinds of A. A. G. O. business. Is very enthusiastic about his territory.

**W. J. LeNoir, S. Carolina**—Doing good work.

**J. W. Yerkes, Missouri**—Made a short trip home to St. Joseph, leaving his car at St. Louis and had the misfortune to have his chauffeur take his car out and skip.

**G. A. Bronson, Oklahoma**—This fellow is exposed in this issue. He was

**Motoring Cost Gone Down**

Pass the Information Along

THE high cost of living is worrying most of us, but the lower cost of motoring should be a source of satisfaction. In the hurly-burly of business and pleasure, our motoring constituency may have overlooked this fact. Let us give you the figures, because the fact of a declining cost will help our industry in no small degree.

In the table of figures given below it will be seen that the improved quality of tires has effected such a large saving that the higher cost of gasoline has been more than offset. The combined fuel and tire cost has been reduced during the past five years an average of about 15%, although 1914 and 1915 were low-priced years.

The figures were compiled by an official of the U. S. Tire Co. on the records of 100 cars covering 10,000 miles each year. The cars were divided into three classes, namely, the light car using a 30x3 tire in front and a 30x3½ in the rear, both plain tread; the medium weight, 6 cylinder car using a 30x4 tire front and rear, with a non-skid in the rear; the heavy 8-cylinder car, a 36x4½ front and rear, with non-skid tread in the rear. The fuel consumption of the three classes of cars was one gallon of gasoline to 20, 17½ and 12 miles respectively.

The table showing cost of gasoline and tires for 10,000 miles each year for six years follows:

No. 1—	1911.	1912.	1913.
Gasoline .....	\$ 78.90	\$ 90.60	\$108.10
Casings .....	150.14	131.20	117.76
Tubes .....	22.20	19.84	16.47
Total .....	\$251.24	\$241.64	\$242.33
No. 2—			
Gasoline .....	\$ 90.68	\$103.54	\$123.53
Casings .....	292.98	257.33	262.20
Tubes .....	38.68	33.35	27.29
Total .....	\$422.34	\$394.72	\$413.02
No. 3—			
Gasoline .....	\$132.24	\$150.99	\$180.15
Casings .....	427.54	379.88	356.20
Tubes .....	48.25	42.04	34.23
Total .....	\$608.03	\$572.91	\$570.58
No. 1—	1914.	1915.	1916.
Gasoline .....	\$ 65.00	\$ 76.65	\$115.00
Casings .....	106.99	81.45	86.42
Tubes .....	16.53	12.96	14.11
Total .....	\$188.57	\$171.06	\$215.53
No. 2—			
Gasoline .....	\$ 74.28	\$ 87.59	\$131.42
Casings .....	231.29	178.91	192.62
Tubes .....	27.24	21.49	23.43
Total .....	\$332.81	\$287.99	\$347.47
No. 3—			
Gasoline .....	\$108.32	\$127.74	\$191.65
Casings .....	342.83	283.85	301.76
Tubes .....	31.41	26.69	29.00
Total .....	\$482.56	\$438.28	\$522.41
Gasoline, per gal..	13.00c	15.33c	23.00c

not satisfied to "play fair" and make a good income but had to fake both the Association and the members.

**J. J. Lyddy, Chicago**—Coming to hand nicely; is going to make a first-class man.

**George Horn, Brooklyn**—After a lay-off of several weeks, will be getting back into harness again soon. He is one of the old reliables whose work is uniformly good.

**E. H. Hiller, Washington**—Started to work from his home at Big Lake to Oklahoma and return but found the roads so bad the trip was abandoned. Doing good work where he is.

(Continued from page 40)

rooms at the hotels and rooming houses, and, of course, secure meals at the restaurants in addition to their garage bills. Even those who camp out here are compelled to replenish their supplies here, hence they all pay some tribute to the town in a financial way and they also leave considerable money along the highway, but within the county, both west and east of Ely. It is possible that this year tourists will leave \$50,000 in Whiteside County. This class of travel is much heavier this year than it was last year, which is largely due to improved road conditions and the benefit of advertising derived from the travelers themselves. This business will increase steadily from year to year and eventually will prove a potent factor in the business welfare of the community.—*Record, Ely, Nev.*

Of the \$20.00 average referred to in the foregoing paragraph, the part going to the garageman or supplyman was undoubtedly genuine and the total amounts in the course of a month's or season's business to a large sum. The constituency to which the A. A. G. O. caters is therefore wise and foresighted when they as individuals and as an organization do all in their power for the success of such projects as the Lincoln Highway.

The three instances mentioned in the newspaper clippings give some idea of the use which has been made of the Lincoln Highway this year. The growth of tourist traffic has been beyond even the most sanguine expectations of those originally interested in the improvement of the transcontinental route. The value of the good roads movement as typified by the Lincoln Highway, to the garage man, is obvious in a business way. It is certain that with the rapid progress and improvement which is going forward under the combined efforts of the people of the country, transcontinental touring in the future will become even more popular every year.

An American consular officer in Venezuela writes that a manufacturer's agent in his district desires to represent American manufacturers of automobile accessories and supplies.

**Come to Detroit**  
The Automobile Center and

**LEARN THE AUTOMOBILE BUSINESS—EARN \$75. TO \$300. A MONTH**

With the New Building and Thousands of Dollars Worth of New Equipment, Our's is the Largest, Exclusive Auto School in the Country

Detroit trained men get preference and get jobs quickly. Think what it means to learn in the Michigan State Auto School. Factories endorse our School, glad to employ our graduates and offer them territory. Men are needed everywhere as testers, repair men, chauffeurs, garage men and service men. Hundreds of our graduates start in business for themselves.

**Get Better Job—or—Go in Business**

We teach you to handle any auto proposition. Students actually build cars from start to finish, getting factory training in assembling, block-testing, road testing, everything. Special complete course in Oxy-Acetylene brazing, welding and cutting, separate from regular course. All leading types of starting, lighting and ignition systems in operation. Six-cylinder Lozier, eight-cylinder King used for road instruction. We have a new Chalmers "6-30" chassis with 3400 r.p.m. motor, also a 1917 Detroit-6 and an Overland. Just added Delco System, used in Buick, Hudson and Packard Twin-6. Have a 1917 Willys-Knight complete chassis.

**Detroit Is the Place to Learn—Start Any Time**

There are 44 auto factories in Detroit and 140 accessory and parts factories. We operate Westinghouse, Autolite, Bijur Service Stations. This has added thousands of dollars' worth of equipment and makes our electrical department unequalled. Students get actual experience in handling all kinds of electrical auto equipment. We have just installed a Sprague Electric Dynamometer for block-testing purposes for students' use. The Michigan State Auto School is the only Auto School having this equipment. Auto factories need Dynamometer men constantly. School open all the year. You graduate in from 10 to 12 weeks. Enter classes any time, any day. Three classes daily: morning, afternoon, evening. There is a great demand for Michigan State Auto School students. Auto factories call for men constantly to fill permanent places.

**Follow the Crowd to the Michigan State Auto School. This is One of the 1916 Classes. Come to Detroit**

**MONEY BACK GUARANTEE**  
We guarantee to qualify you in a short time for a position as chauffeur, repair man, tester, demonstrator, garage man or automobile dealer, paying from \$75 to \$300 monthly, or refund your money. We have constantly more requests for Michigan State Auto School Graduates than we can supply.





**Auto Factory Co-Operation—Additional Building and Equipment**

We have arrangements with the Auto factories to put them in touch with men who intend going into business for themselves. The factories are looking for trained men to represent them. Come here and start right; get the information first-hand and don't wait. 33,000 square feet of additional floor space in our new building, thousands of dollars' worth of new equipment, plenty of room for students to work in our new building at 687-89-91 Woodward Ave. Our school has grown by leaps and bounds, students come from all over the world. Graduates have started in business for themselves; others have accepted good jobs both in Detroit and over the country. Their work has proven that we train them right. We are constantly adding new equipment.

**ACT QUICKLY—NOW—DON'T WAIT**

Get full particulars, "Auto School News" and New Catalog, both absolutely free, or, better still, jump on the train, as hundreds have done, and come to Detroit, the "Heart of the Automobile Industry," and learn right.

**Michigan State Auto School** The Old Reliable School  
A. G. ZELLER, President  
31 Auto Bldg., 687-89-91 Woodward Ave., 11-19 Selden Ave. DETROIT, MICHIGAN, U. S. A.

**"You'll growl till you get LYON'S"**

Over 400 Different Numbers Carried in Stock  
Bigger Profit Immediate Service

Bronzed Bushed  
Accurate Fit

Long Life  
Oil Tempered

# LYON SELF-LUBRICATING SPRINGS

(Stanley Patent)

**NO RUST—NO SQUEAK—GUARANTEED**

MADE TO MATCH THE STANDARD SPRINGS

STRICTLY  
HIGH GRADE

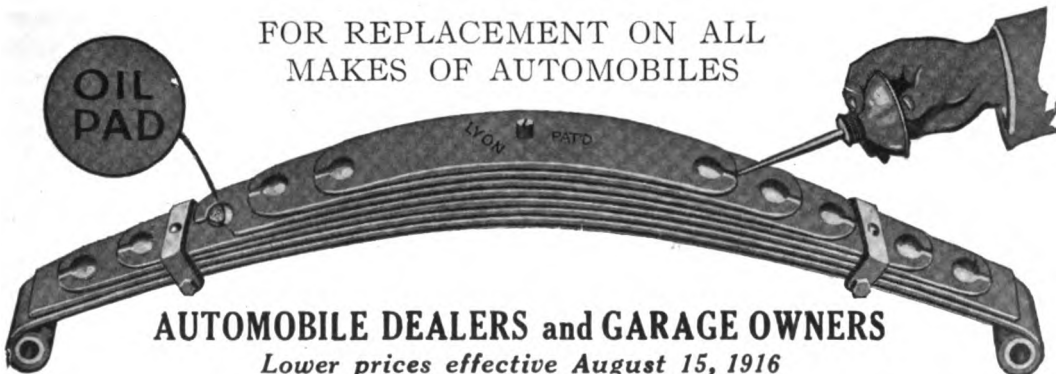
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Axle shafts for  
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Axle shafts for  
other cars

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is a handy guide

FOR REPLACEMENT ON ALL  
MAKES OF AUTOMOBILES



**AUTOMOBILE DEALERS and GARAGE OWNERS**

Lower prices effective August 15, 1916

## THE EDWARD F. LYON COMPANY

SEND FOR CATALOGUE 6-A  
Key to bigger profits and better service

Woodward Ave. and Antoinette St., DETROIT, MICH.

Patronize our advertisers and build up your Association and Journal



# Doings in The Garage and Auto Trade

## New Garages, Auto Dealers, Repair Shops, Etc.

**North Dakota, Towner;** R. S. Dutton and George B. Vermillya will erect a large fireproof garage here; all kinds of supplies and accessories will be kept.

**Michigan, Hancock;** the garage of William Seppi was destroyed by fire; loss \$7,500; all kinds of supplies and accessories will be kept.

**Minnesota, Red Wing;** Henry Helleckson will erect a fireproof garage 50 by 66 feet; all kinds of supplies and accessories will be kept.

**Indiana, Newcastle;** Charles Zimmerman will open a garage and repair shop at 1306 Walnut St.

**Minnesota, Wanamingo;** Martin Tiller will build an addition to their garage; all kinds of supplies and accessories will be kept.

**Minnesota, Avon;** Frank Whitman will erect a large garage here, 32 by 80 feet; all kinds of supplies and accessories will be kept.

**Minnesota, Goodhue;** Andrew Peterson will erect a garage 40 by 160 feet; all kinds of supplies and accessories will be kept.

**Minnesota, Long Prairie;** A. Mielke will build an addition to their garage, 48 by 50 feet; all kinds of supplies and accessories will be kept.

**Minnesota, Medford;** Boynton and Gilman will open a garage here; all kinds of supplies and accessories will be kept.

**Texas, Beaumont;** E. J. Lowe will open a garage here; all kinds of supplies and accessories will be kept.

**Oklahoma, Hobart;** George A. Botton will open a sales room at 320 Jefferson St.

**Missouri, Kansas City;** the King Motors Corporation has been incorporated with a capital of \$50,000; Douglas Andrews, incorporator.

**Kansas, Garden City;** Orville Warner will open a garage here; all kinds of supplies and accessories will be kept.

**Illinois, Joliet;** the Joliet Motor Co. will erect a garage at East Jefferson and Michigan Sts.; all kinds of auto supplies and accessories will be kept.

**Illinois, Peoria;** Pinkerton Motor Co. will erect a brick service station at 711-17 Main St., to cost \$24,065; all kinds of auto supplies and accessories will be kept.

**South Dakota, Mitchell;** Fred Wedehase will erect a garage at 114 Main St.; all kinds of supplies and accessories will be kept.

**Minnesota, Baudette;** M. E. Murray is adding a 40-foot addition to his garage; all kinds of supplies and accessories will be kept.

**Iowa, Clinton;** J. P. Daugherty will erect a garage on Blackman St.; he will carry a full line of supplies and accessories.

**Indiana, Flora;** S. F. Neher of the Camden Auto Co. will build an addition to their garage here; all kinds of supplies and accessories will be kept.

**Indiana, Seymour;** Charles Pauley will erect a large garage here, at Ewing and Bill Sts., between Third and Fourth Sts.

**North Dakota, Walford;** John A. Yoder and Ed. Weirick will erect a garage; all kinds of supplies and accessories will be kept.

**North Dakota, McClusky;** Fred Trep will open a garage and machine shop here; all kinds of supplies and accessories will be kept.

**Minnesota, Minneapolis;** T. B. Walker will erect a garage at Eighth St. and Hennepin Ave.; all kinds of supplies and accessories will be kept.

**Minnesota, Moose Lake;** the Cloquet Auto Supply Co. will erect a garage 40 by 60 feet; all kinds of supplies and accessories will be kept.

**Minnesota, Little Falls;** the Motor Inn will build an addition to their garage to be 150 feet long and 50 feet wide.

**Illinois, Seneca;** Alfred Clark has purchased a site 75 by 100 feet and will erect a garage; all kinds of supplies and accessories will be kept.

**Wyoming, Douglas;** a garage will be built for Jesse E. Slichter on the corner of Second and Walnut Sts., to be 50 by 120 feet.

**Pennsylvania, Roanoke;** Fred J. Darnell will erect a garage 54 by 60 feet; all kinds of auto supplies and accessories will be kept.

**Nebraska, Ogalla;** C. W. Hall will erect a garage for Pankonin Co., 50 by 120 feet; all kinds of supplies and accessories will be kept.

**Pennsylvania, Pittsburgh;** D. T. Rifle will erect a garage and salesroom in Forbes St. for the Studebaker Co. to be 60 by 125 feet; all kinds of supplies and accessories will be kept.

**Utah, Park City;** Sutton and Schaper will erect a large garage here; all kinds of supplies and accessories will be kept.

**Kansas, Abilene;** Shockey and Garvey will erect a garage on the corner of Fourth and Broadway; all kinds of supplies and accessories will be kept.

**Illinois, Chicago;** Architects Lebeubaun, Marz and Vizeant, 4876 Drexel Blvd., have prepared plans for a \$30,000 service house to be erected at 345 E. 63d St. for the White City Amusement Co.

**Indiana, Lafayette;** Edward M. Watson will have a garage erected here to be 77 feet wide and 138 feet long on Columbia and Sixth; all kinds of supplies and accessories will be kept.

**Minnesota, Woodstock;** C. S. Miller will erect a garage here; all kinds of supplies and accessories will be kept.

**Montana, Maddock;** S. Donegan and Ed. Tillitsen have purchased the garage of Mr. Arbuckle; all kinds of supplies and accessories will be kept.

**Kansas, El Dorado;** U. S. Vulcanizer Co. of San Francisco have opened branch plant here; G. P. Sears and Arthur J. Lee, mgrs.

**Iowa, Esterville;** Lew Ostemier purchased the garage of Mr. Weaver and will install a full supply of auto supplies and accessories.

**Iowa, Des Moines;** Payne Motor Co. will open a garage in the new building being erected here.

**Indiana, Frankfort;** W. F. Kernodle will erect a garage on South Jackson St.; all kinds of supplies and accessories will be kept.

**Wisconsin, Hustler;** Herbert Stickney will erect a modern and up-to-date garage here; all kinds of supplies and accessories will be kept.

**Illinois, Murphysboro;** the Morgan Motor Sales Co. will open a garage on North Eleventh St.; all kinds of auto supplies and accessories will be kept.

**Illinois, Maquom;** Arthur Hedding will erect a garage here; all kinds of supplies and accessories will be kept.

**Indiana, Columbia City;** Adam Rumsyre has sold a half interest in his Auto Inn garage to Clarence Paige.

**Missouri, Kansas City;** the Economy Garage, 2906 E. 23d St., was destroyed by fire; loss \$7,000; Fred H. Ream, prop.

**Wyoming, Lander;** F. E. Felkner will erect a garage here; all kinds of auto supplies and accessories will be kept.

**Wisconsin, Milwaukee;** the Standard Racine and Rubber Co. are planning to erect a garage on Astor St. and Juneau Ave.; all kinds of supplies and accessories will be kept.

**Iowa, Grundy Center;** Goude and Harwood have opened a new garage here; all kinds of supplies and accessories will be kept.

**Minnesota, Comfrey;** Thomas Cullen, Jr. will erect a one-story brick garage here; all kinds of supplies and accessories will be kept.

**Illinois, Geneseo;** Glen Tracy will erect a garage, two-story brick, 50 by 100 feet; all kinds of supplies and accessories will be kept.

**Minnesota, St. Paul;** Joy Brothers will erect a large garage here; all kinds of auto supplies and accessories will be kept; the garage will cost \$50,000.

**Michigan, Marine City;** Zimmerman Brothers will erect a large garage for Dodge Brothers, to be used for storing Dodge cars, for selling supplies and repair shop.

**Indiana, Whitewater;** Elmer Harrison is making preparations for a public garage here; all kinds of supplies and accessories will be kept.

**Indiana, Logansport;** a new modern cement brick garage is being erected for Ed. Kline; all kinds of supplies and accessories will be kept.

**California, Oakland;** the County Board is planning to erect a county garage in connection with the county hospital; address Chairman Murphy.

**New York, New York;** J. Roffit and Woodbine will open a garage at 249-51 West 28th St.; all kinds of supplies and accessories will be kept.

**Massachusetts, Cambridge;** E. T. Hazen is having a garage erected at 42-44 Lebanon St.; all kinds of supplies and accessories will be kept.

**Massachusetts, Boston;** Wm. M. Bailey, 88 Broad St., will have a public garage erected for the Huntley Garage Co.; all kinds of supplies and accessories will be kept.

**Illinois, Knoxville;** Messrs. Setterdahl and Youngren will erect a garage on the northwest corner of the square; all kinds of supplies and accessories will be kept.

**Indiana, Williamsport;** Ray Keys has purchased a site and will erect an auto storage and salesroom to be 31 feet wide and 130 feet long; all kinds of supplies and accessories will be kept.

# Pondelick Brothers

will  
pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrounding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.  
Main Office, Leavitt St. and Jackson Blvd.

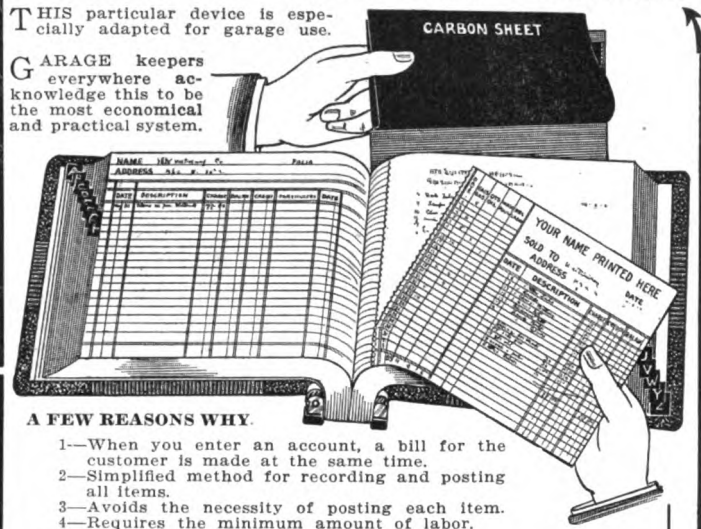
**Pondelick Brothers, CHICAGO ILLINOIS**

# SAVE TIME AND MONEY

Our SPECIAL GARAGE Bookkeeping Plan Gives You the HIGHEST Possible EFFICIENCY

THIS particular device is especially adapted for garage use.

Garage keepers everywhere acknowledge this to be the most economical and practical system.



## A FEW REASONS WHY.

- 1—When you enter an account, a bill for the customer is made at the same time.
- 2—Simplified method for recording and posting all items.
- 3—Avoids the necessity of posting each item.
- 4—Requires the minimum amount of labor.

This page is the customer's bill; the one underneath is your copy.

Harton's Garage and Accounting Record is another new labor saving device we make. Ask about it.

SEND FOR DESCRIPTIVE FOLDER AND FULL PARTICULARS  
**THOMAS J. HARTON & CO., Inc.,** 212x Church St.  
NEW YORK

Loose Leaf Specialties



# CELLULOID CLEANSER

The only preparation on the market which will positively remove all dirt, grease and other accumulations from celluloid automobile windows.

Here's an accessory which is a necessity for every automobile—A BIG SUCCESS.

Liberal Profits. Representative Dealers desired.  
Write for Particulars.

**CELLULOID CLEANSER COMPANY**  
Tower Building - - CHICAGO, ILL.



# •The Successful• Garage Manager

is the one who lets the people know he is seeking their trade—that he is in business to serve them. The same is true in any business. Wherever you see a

# Federal Electric Sign

installed, you will not see any one loafing.

You should realize that many autoists who need garage facilities would stop at your place if there was an electric sign to tell them where you are.

Let us help you plan a Federal Electric Sign for your garage. Address Dept. S.

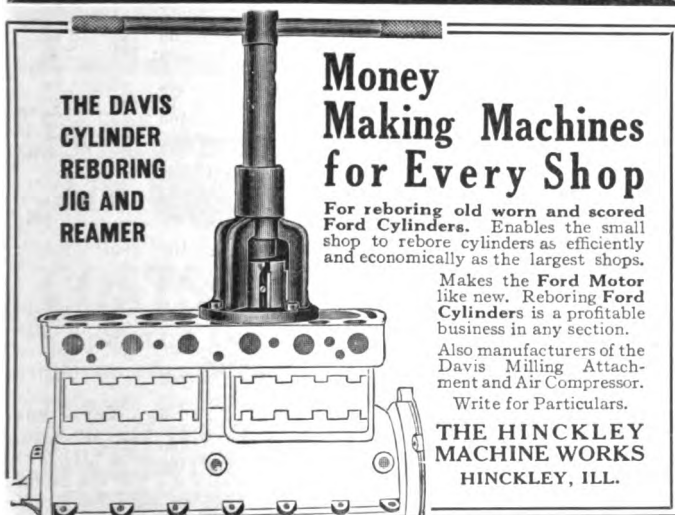
**Commonwealth Edison Company**

Edison Building

72 West Adams Street, Chicago

If located outside Chicago address: Federal Sign System (Electric),  
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# A Review of The Market

## Gasoline.

The gasoline market at first hands is stronger than a month ago and refiners are quite unanimous in prophesying an early advance. The quotations in tank wagons to dealers remain the same as quoted in our last report, namely, 16½¢ in Chicago, 22¢ in New York, 23¢ in Boston, 22¢ in Philadelphia, 21¢ in Pittsburgh, 21¢ Cleveland, 16½¢ Detroit, 14.2¢ St. Louis, 16½¢ Kansas City. Much interest is shown in the work being done by the Bureau of Mines and Bureau of Standards at Washington which will ultimate in the creation of a standard of quality for gasoline. It is evident that very careful work is in progress and that every effort will be made to reach conclusions that will be fair to all interests, with a due regard to the welfare of the consumer. It is only a question of a relatively short time when gasoline will be misbranded if it does not pass certain definite and proper tests for purity and efficiency. The A. A. G. O. representative at Washington is keeping a close watch on developments and readers of this journal will be advised of every new step taken.

## Iron, Steel and Metals.

An unprecedented advance in pig iron has occurred during the past month, due largely to the rush of buyers to cover quite distant future requirements, in some cases as far ahead as the latter half of 1917. Only a moderate amount of new business for quick shipment is reported. Steel-making irons have also shown marked advances, the chief demand for Bessemer coming from abroad. A large amount of export business has been declined, as it is the policy of manufacturers to give preference to domestic trade. The figures named in war contracts for the last half of 1917 are 4¢ to 4½¢. New discounts went into effect November 1st on lap weld iron and steel pipe including lined pipe, the new values being \$2.00 a ton higher for black and galvanized. The advance on iron and steel boiler tube is \$4.00 a ton. The month of October has made a new record for production of iron and steel, the outputs being the largest ever known in the industry. The two untoward features of the trade are the car shortage and the increase in fuel cost. Copper is active and strong, domestic consumers being the heavy buyers. Trading in tin has also been active, with prices strong and tending upward. Lead continues to be a quiet market without significant change in values. A better demand for spelter from consumers and dealers has strengthened the market slightly. Antimony is dull and quiet, while aluminum is easier and available on a slightly lower basis. The old

metals market continues firm without important changes. Scrap metal in small lots offered by garagemen, shopmen and others command the following prices in the Chicago market: Aluminum 33¢, copper 24¢, heavy brass 15@16¢, light brass 12½¢, cast iron 8@10¢, engine blocks 8 to 10¢.

The subjoined statement of prices is compiled by a member of our staff:

Pig Iron,	Nov. 1,	Nov. 3,
Per gross ton:	1916	1915
No. 2, Philadelphia.....	\$22.50	\$16.75
No. 2, Valley furnace.....	23.00	15.00
No. 2 Southern, Cincinnati.....	19.90	15.90
No. 2, Birmingham, Ala.....	17.00	13.00
No. 2, furnace, Chicago.....	24.00	16.50
Basic, delfd, eastern Pa.....	21.50	17.00
Basic, Valley furnace.....	22.00	15.50
Bessemer, Pittsburgh.....	26.95	16.95
Malleable Bess., Chicago.....	24.00	16.50
Gray forge, Pittsburgh.....	22.95	15.20
L. S. charcoal, Chicago.....	20.25	16.75
<b>Rails, Billets, etc.,</b>		
Per gross ton:		
Bess. rails, heavy, at mill.....	33.00	28.00
O.-h. rails, heavy, at mill.....	35.00	30.00
Bess. billets, Pittsburgh.....	50.00	25.00
O.-h. billets, Pittsburgh.....	50.00	26.00
O.-h. sheet bars, Pittsburgh.....	50.00	27.00
Forging billets, base, P'gh.....	75.00	42.00
O.-h. billets, Philadelphia.....	50.00	32.00
Wire rods, Pittsburgh.....	60.00	35.00
<b>Finished Iron and Steel,</b>		
Per lb. to large buyers:	Cents.	Cents.
Iron bars, Philadelphia.....	2.55	1.65
Iron bars, Pittsburgh.....	2.85	1.50
Iron bars, Chicago.....	2.40	1.45
Steel bars, Pittsburgh.....	2.75	1.50
Steel bars, New York.....	2.91	1.66
Tank plates, Pittsburgh.....	4.00	1.50
Tank plates, New York.....	4.16	1.76
Beams, etc., Pittsburgh.....	2.75	1.50
Beams, etc., New York.....	2.86	1.66
Skelp, grooved steel, P'gh.....	2.70	1.45
Skelp, sheared steel, P'gh.....	2.80	1.50
Steel hoops, Pittsburgh.....	3.00	1.75
<b>Sheets, Nails and Wire,</b>		
Per lb. to large buyers:	Cents.	Cents.
Sheets, black, No. 28, P'gh.....	3.40	2.15
Sheets, galv., No. 28, P'gh.....	4.90	3.60
Wire nails, Pittsburgh.....	2.70	1.85
Cut nails, Pittsburgh.....	2.70	1.80
Fence wire, base, P'gh.....	2.65	1.70
Barb wire, galv., P'gh.....	3.55	2.70
<b>Old Material,</b>		
Per gross ton:		
Iron rails, Chicago.....	\$22.00	\$14.25
Iron rails, Philadelphia.....	21.00	17.50
Car wheels, Chicago.....	16.00	12.50
Car wheels, Philadelphia.....	16.50	13.50
Heavy steel scrap, P'gh.....	19.00	15.00
Heavy steel scrap, Phila.....	16.50	14.50
Heavy steel scrap, Chicago.....	18.75	12.50
No. 1 cast, Pittsburgh.....	16.00	13.50
No. 1 cast, Philadelphia.....	16.75	14.00
No. 1 cast, Chgo (net ton).....	14.75	11.75
No. 1 RR. wrot, Philadelphia.....	23.00	16.00
No. 1 RR. wrot, Chicago (net).....	19.00	14.25
<b>Coke, Connellsville,</b>		
Per net ton at oven:		
Furnace coke, prompt.....	\$7.50	\$2.25
Furnace coke, future.....	4.00	2.35
Foundry coke, prompt.....	7.00	2.75
Foundry coke, future.....	4.50	2.60
<b>Metals,</b>		
Per lb. to large buyers:	Cents.	Cents.
Lake copper, New York.....	29.00	17.87½
Electrolytic copper, N. Y.....	28.50	17.87½
Spelter, St. Louis.....	10.37½	14.75
Spelter, New York.....	10.62½	15.00
Lead, St. Louis.....	6.90	4.80
Lead, New York.....	7.00	4.90
Tin, New York.....	41.87½	35.87½
Antimony (Asiatic), N. Y.....	13.00	35.50
Tin plate, 100-lb. box, P'gh.....	\$5.75	\$3.15

## Motor Stocks.

Motor stocks of the more stable class are strong and have been affected little by the election ups-and-downs of the general stock market. Sales have not been large owing to the diverting influence of the election activities. New

issues of the better sort are selling steadily, as the auto industry continues to be attractive to the investing public capable of sizing up a substantial and growing industry.

The following list of quotations is of November 9 dating and was compiled by John H. Powers & Co., Chicago and New York:

Name—	Par.	Bld.	Asked.
Allen Motor.....	10	...	100
American Motor Truck Co.....	10	...	5
Bour-Davis.....	10	...	12.50
Briscoe Motor, com.....	100	50	54
Briscoe Motor, pfd.....	100	...	...
Case (J. I.) Thresh. Mach., pfd.....	100	79	89
Champion Auto Equipment.....	1	.80	.97½
Chandler Motor Co.....	100	...	105½
Chevrolet Motor Co.....	100	185	191
Coe.....	1	...	.37
Cole Motor Co.....	100	...	16
Continental Motors, com.....	100	37	37½
Continental Motors, pfd.....	100	91	94
Elec. Storage Battery Co.....	100	...	67½
Emerson Motors Co., pfd.....	10	...	7
Emerson Motors Co., com.....	10	...	10
Essex Motor.....	...	...	75
Federal Air Craft & Motor Co.....	10	...	5
Federal Truck.....	10	78	82
Firestone Tire & Rubber, com.....	100	890	...
Firestone Tire & Rubber, pfd.....	100	112	...
Fisk Rubber Co., com.....	100	...	136
Ford Motor of Canada.....	100	340	355
Forstia Light Car, pfd.....	100	...	100
Forstia Light Car, com.....	100	...	100
General Motors, com.....	100	700	755
General Motors, pfd.....	100	126	127
Goodyear Tire, pfd.....	100	106½	...
Grant Motor Co., com.....	10	8	9
Gray & Davis, com.....	100	...	29
Harroun.....	10	5	5
Hendee Mfg., com.....	100	28	32
Hendee Mfg., pfd.....	100	96½	99
Hupp Motor Co., com.....	10	6%	6%
International Motor, com.....	100	...	6%
International Motor, pfd.....	100	...	17
Kelly-Springfield Tire, com.....	100	82½	85
Kelly-Springfield Tire, 1st pfd.....	100	95	97½
Kelsey Wheel Co.....	100	98	98
Lee Tire & Rubber, com.....	100	44	44½
Locomobile Co., com.....	100	20	22½
Maibohm Motors Co.....	10	...	9
Maxwell Motors, com.....	100	79½	80
Maxwell Motors, 1st pfd.....	100	86	87
Maxwell Motors, 2nd pfd.....	100	57	58
Miller Rubber Co., com.....	100	275	280
Mitchell.....	...	65	67
Motor Products.....	...	...	64
National Rubber.....	...	...	6½
New Departure Mfg., pfd.....	100	...	...
Packard Motor Car Co., com.....	100	175	180
Packard Motor Car Co., pfd.....	100	101	102½
Paige-Detroit.....	10	...	49
Peerless Truck & Motor.....	50	...	25
Perfection Tire & Rubber.....	1	90	...
Portage Rubber Co., com.....	100	65	75
Portage Rubber Co., pfd.....	100	101	105
Princess Motor.....	1	...	1
Regal Motor pfd.....	100	18	26
Reo Motor Car.....	10	42	43
Saxon Motor Car.....	100	80	82
Simplex Auto Co.....	100	80	...
Scripps-Booth.....	100	56	56½
Springfield Body, pfd.....	...	...	127
Springfield Body, com.....	...	84	86½
Sterling.....	10	10	11
Standard Motors.....	10	...	8%
Stewart-Warner Speed Corp., com.....	100	102½	104
Stewart-Warner Speed Corp., pfd.....	100	108	110
Stromberg Carburetor.....	...	43%	44
Studebaker Corp., com.....	100	128	128½
Stutz Motor.....	...	72%	73½
Sun Motor Co.....	100	...	105
Swinehart Tire & Rubber Co.....	100	85	86
United Motors.....	10	63	63½
Universal Motors.....	5	8	8½
White Motor Co., com.....	100	57	57½
Willis-Overland, com.....	100	42%	43%
Willis-Overland, pfd.....	100	...	104
Woods-Mobilette (New).....	1	.07	.08½

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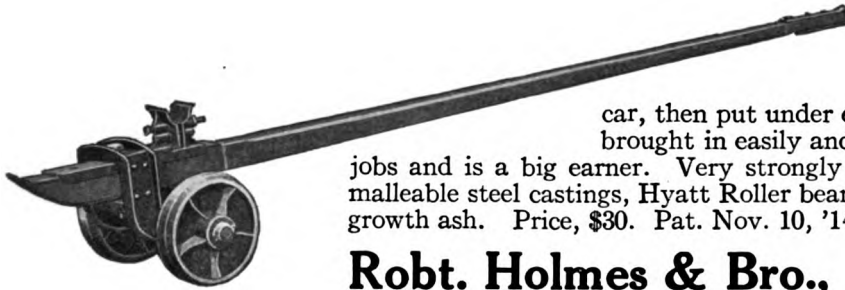
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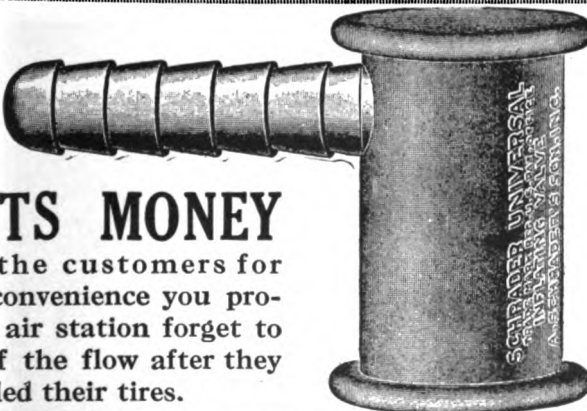
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When a card has been issued by this Bureau, the bearer will possess a very high recommendation, and he will know that there is a big and influential organization with a real, live and tangible interest in his welfare behind him, and he can feel secure in the knowledge that a position will be obtained for him, if possible, where he wants it and under the conditions he desires. *The dominating motive governing this Bureau will ever be unselfish, thoughtful service.*

**A LIMITED INDEMNITY POLICY** providing benefits in case of loss of Life, Limb, Sight or Time by certain accidental means other than occupational injuries under restricted conditions is the *first big benefit* made available to registered members.

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**ALSO COVERAGE FOR OCCUPATIONAL INJURIES** during the first fourteen day period of incapacitation, which is *not allowed* under the **WORKMEN'S COMPENSATION LAWS**.

Members will also be registered in *Identification Bureau* and a key-ring tag with identification number furnished.—This insures return of keys if lost and is complete identification if injured while away from home.

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Class B Helper	Washer
Class C Apprentice	Class F Driver or
Class D Office Help	Chauffeur

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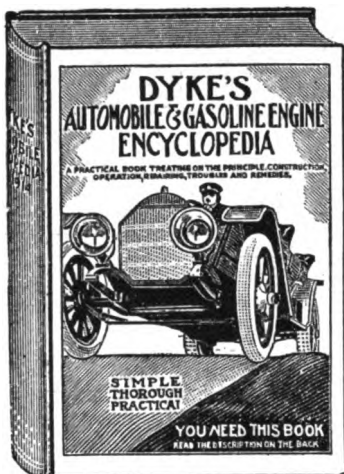
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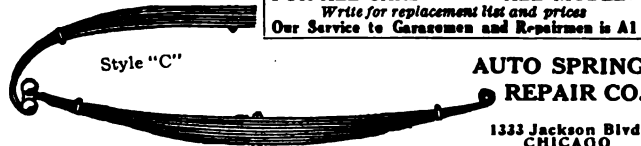
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We buy and sell Automobile, Mining and Industrial shares. We can give you a price on any stock.

**C. S. Mather & Son,**  
17 No. La Salle St.,  
Chicago, Ill. Phone, Main 2358

### PROTECT YOUR IDEAS

Many of the best selling accessories and supplies were invented by garage and repair men. Protect the ideas you develop.

A patent, a trade-mark or a copyright may mean the difference between affluence and poverty in later years.

**CHARLES TURNER BROWN,**  
127 North Dearborn Street, Chicago, Ill.

**GARAGE FOR SALE—FINE LOCATION,** doing a good business; 62-car capacity. Did \$20,000 business last year. Price, \$7,500. Stock on hand, \$1,200. Located in Chicago, without near-by competition. For particulars, address, A. B., care this office.

**WANTED TO BUY—Garage in Nebraska or other Western state.** Cash if deal is not too large, otherwise part cash, part time. Address, C. S., this office.

## Automobile Cylinders REBORED AND GROUND

PROMPT, EFFICIENT SERVICE.  
PRICES MODERATE.

**STERLING ENGINE CO.**  
331 S. Clinton ST., Chicago

### ENGINES—A LARGE STOCK SAVING OF 50% TO 75%

50 H. P. Marine Engine, \$100; 30 H. P. Cadillac Engine, \$75; 35 H. P. Continental, \$75; 35 H. P. Wisconsin Engine, \$100; 3 Cyl. Chass 30 H. P. A. C. Bosch Magneto, \$65.

### MOTOR BOAT

Timkin Axles, Transmissions, Low and High Tension Magnetos, and many other parts, at great savings, while they last. Order now before they are gone. Give description of parts wanted.

**ROBERTSON,**

1255 North Clark St., Chicago, Ill.

## AA SCORED CYLINDERS

Repaired by Patented Electric process. Filled with a silver and nickel alloy. (Eliminates Grinding.) No warping or enlarging of cylinder bore. Same piston and rings used. Reshipped 24 hours after received. Also do welding and grinding.

**L. LAWRENCE & CO.**

1522 S. Michigan Ave. 292 Halsey Street  
Chicago, Ill. Newark, N. J.

### LEARN THE AUTOMOBILE BUSINESS

We teach you construction, repairing and driving in 6 to 8 weeks. Special instruction in Acetylene Welding, Knight Engines, Vulcanizing, Electric Starters, Automobile Salesmanship. Greer graduates always in demand. Earn \$150 per month and up.

Courses \$15, \$35, \$50, \$65 and \$150

Booklet "How to Succeed in the Automobile Business"—FREE. Write today.

**GREER COLLEGE OF MOTORING**

1519 S. Wabash Ave. Chicago, Ill.

**"HURRY-UP" RADIATOR REPAIR SERVICE.** Sheet Metal work that pleases. Fenders, hoods, gasoline tanks, etc., repaired and built to order. **CRAFTSMEN METAL CORPORATION,** 2815-17-19 Wabash Ave., Calumet 30, Chicago.

## SO-LUMINUM

"DON'T SCRAP ALUMINUM PARTS." SAVE them with SO-LUMINUM, new, great welding compound; ¼ time and cost of acetylene. No flux—use gasoline torch. **TRIAL BAR WITH FULL DIRECTIONS, 50c.** SO-LUMINUM MFG. CO., 1790 BROADWAY, N. Y., Booklet 8.

### STARTING AND LIGHTING EQUIPMENT

Magnetos, Coils, Lighting, Generators, Starting Motors, Magnetizers. We manufacture, sell and repair. Prices right and service the best.

**H. B. WEBER & CO.,**

1336 Michigan Avenue, Chicago, Ill.

**ANDRE G. CATELAIN**

Everready Automatic Engine Starter. General machine work for foreign and American cars. Welding of all metals. Manufacturer Catelain Hose Coupling.

1446-8 Indiana Ave. Chicago, Ill.

**GARAGE AND RESIDENCE FOR SALE—**Illinois town of 2,000 inhabitants, located near the railroad station, one block from main street. Established two years. Fifteen-car capacity, but one other garage in the town. Four-room house on lot, 70x128 feet. Price, \$3,500. For particulars, address, J. G., care this office.

A big opportunity for garage men and dealers to handle and represent

## THE BRICKEY AUTO HEATER and other high grade AUTO SPECIALTIES

The Brickey Auto Heater will keep a car at parlor temperature in winter. The reasons why it is the only thing to use are—

### Simplicity

Is the simplest device conceivable and any car owner can readily understand the principle. No exhaust gases are used.

### Price of \$3.90 and \$4.90

for the front and rear heaters, respectively, insures its popularity and ready sale. No cost for fuel.

### Effectiveness

Either heater will send a continuous stream of pure heated air free from gases and fumes.

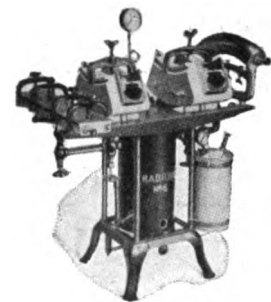
LET US HEAR FROM YOU TODAY

**THURSTON AUTO SUPPLY MFG. CO.**

3020 Michigan Ave., Chicago

Phone Calumet 745

Help us appreciate the medium that serves us best by mentioning **AMERICAN GARAGE AND AUTO DEALER** when writing to us.



## Radium Steam Vulcanizer

Best on Earth. Write for Prices.

Manufactured by

**MILWAUKEE AUTO SPECIALTY CO.**  
705-711 Chestnut St. MILWAUKEE, WIS.

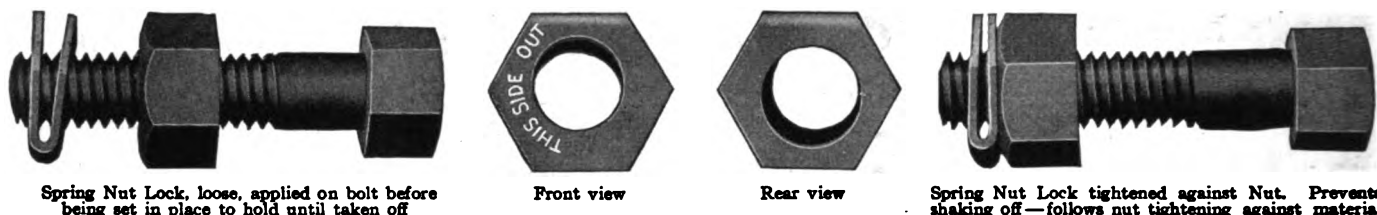
### WANTED—OLD CARS

Will pay highest prices and spot cash for old cars in any condition. Jackson Auto Salvage House, 560 Jackson Blvd., Chicago.

**SALESMAN WANTED,** one with car preferred, to demonstrate and sell automobile accessories. Sales Manager, 650 Woodward Ave., Detroit, Mich.

**WANTED TO BUY—A well-located garage** holding 100 or more cars in Chicago or vicinity. Give full particulars. Address, C. B., this office.

**GARAGE FOR SALE—Garage and taxi business;** good location, no competition worth while. 80-car capacity, doing nice business, with good chance to increase. Price, \$5,000, which includes stock and six limousine cars. Address, M. G., this office.



Spring Nut Lock, loose, applied on bolt before being set in place to hold until taken off

Front view

Rear view

Spring Nut Lock tightened against Nut. Prevents shaking off—follows nut tightening against material

*Will Firmly Lock All Nuts in Place on the Cars or Parts You Manufacture*

# SPRING NUT LOCKS

*save the countless losses that are constantly occurring wherever machines are run and part is fastened to part by nuts and bolts*

## Better Be Safe Than Sorry

Whether you manufacture or sell any part of an automobile from the radiator to the rear axle *see to it* that every nut is **safely, SECURELY, PERMANENTLY** locked in place on its bolt with a *Spring Nut Lock*.

*Increase the reliability, DURABILITY, STABILITY* of your motor, tractor, battery or what not by slipping on over *every* nut that engages a thread this simple, light, cheap and positively *efficient* device that holds any nut permanently in place and yet may be released at will—when lock, nut and bolt are as good as ever and can be used over again as often as desired.

*You cannot afford* to be without *Spring Nut Locks*. You cannot afford the loss of prestige, the mental worry, the risk of serious losses in life, limb and pocket-book that are liable to occur at *any moment* where vibration can start nuts loosening that are not properly locked in place, but are yet expected to hold vital parts. *The Spring Nut Lock is your safety insurance.*

In anticipation of the great volume of advance orders that have already begun to pour in on us as the merits of this great little device are becoming known to the mechanical world, we have let contracts for the manufacture of *Spring Nut Locks* to The Stowell Company of South Milwaukee, Wis., who have one of the largest plants in the country adapted to turning out this safety necessity in the enormous quantities it will be needed.

The Lock slips on the bolt like a washer and as easily—*economy of time in application.*

Its cost to the user is a mere trifle more than a washer—*the initial economy.*

It will not cut the thread of the bolt—*enduring economy.*

Price lists are now ready. Write us for your probable needs NOW. Get in line to get *your share of this first output*. Send us your name and business and get our *price lists* for your guidance.

Spring Nut Locks for Standard Threads for the following sizes are scheduled for delivery on or before January 1st  $\frac{3}{8}$  in.,  $\frac{1}{2}$  in.,  $\frac{5}{8}$  in.,  $\frac{3}{4}$  in.,  $\frac{7}{8}$  in. and 1 in. By December 15 we will try to supply all standard and special sizes and by January 1st we are in hopes to be able to fill all orders promptly, however large. In the meantime look out for your own needs by getting in touch with us immediately. Allotments will be made from first output in proportion to the size of the advance order filled with us. Orders filled in rotation as received.

Spring Nut Locks for S. A. E. Standard Thread for automobile use have been thoroughly tested out and have aroused the enthusiasm of automobile men wherever tried. Locks for S. A. E. Standard Threads for  $\frac{5}{16}$  in.,  $\frac{3}{8}$  in.,  $\frac{7}{16}$  in.,  $\frac{1}{2}$  in. and  $\frac{9}{16}$  in. are also in preparation and will be ready about December 1st. Get in your orders at once.

Jobbers, Dealers, Garage Men—all Dealers—should take steps to supply the early demand of their customers for Spring Nut Locks. Manufacturers who take pride in their product should be prepared to adopt them. Railroads where economy and safety are first must have them. Write us your needs today and let us help you.

## SPRING NUT LOCK COMPANY

643 Transportation Bldg. :: :: :: :: :: :: Chicago, Illinois

Patronize our advertisers and build up your Association and Journal



# Cold Weather STARTING Made Easy



PRICE  
Ten Days Trial Free. **\$5** A Big profit for You

## GARAGE MEN Here Is a \$5 Article That Every Motorist Is Looking for

A *real* priming outfit that makes cold weather *starting* easy! You know the trouble all motorists and truck drivers have starting their engines in cold weather. It is money in your pocket if they drive *all* winter! *Here is the remedy for it!* Already thousands of car owners are using this simple, easily-installed outfit and couldn't get along without it. Fourth year on the market. Hundreds of sales waiting for you.

Sprays Vaporized,  
Fireable Gasoline  
Into the Manifold

# Imperial Primer

A Necessity  
not an  
Accessory

Consists of a small, substantially-made plunger pump, all necessary bolts, connections and tubing furnished, ready to mount on the dashboard of any car, any model. All connections made by the well-known Imperial Compression Couplings. No soldering, no flaring or threading required except on manifold. So simple to put on that any motorist can install the outfit. Never wears out.

**A Good Profit for You—No "Come-Backs"—If Your Jobber Cannot Supply You, Write Us Direct.**

The Imperial Primer is every bit as necessary on cars having self-starters as those cranked by hand. It saves batteries, gives a quick, positive start on the *first* turn-over. Eliminates the irritating job of pouring raw, lifeless gasoline in the priming cocks, which is enough to spoil anyone's temper.

Make YOUR place of business headquarters for the big demand for Imperial Primers in your neighborhood which is sure to follow our big national advertising in *The Saturday Evening Post*, *Literary Digest*, etc. Get in on these good profits. Act today.

### IMPERIAL BRASS MANUFACTURING COMPANY

529 S. Racine Avenue  
CHICAGO, ILL.



Within Easy Reach—  
Right on the  
Dash



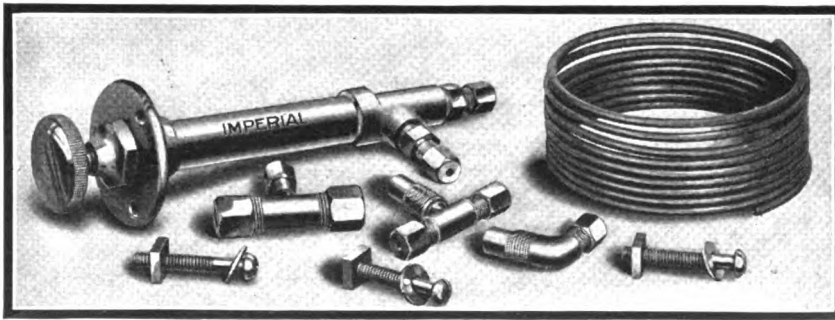
A Gentle Pull  
Sucks in the  
Gas



A Gentle Push  
Sprays Vaporized  
Gas into Manifold

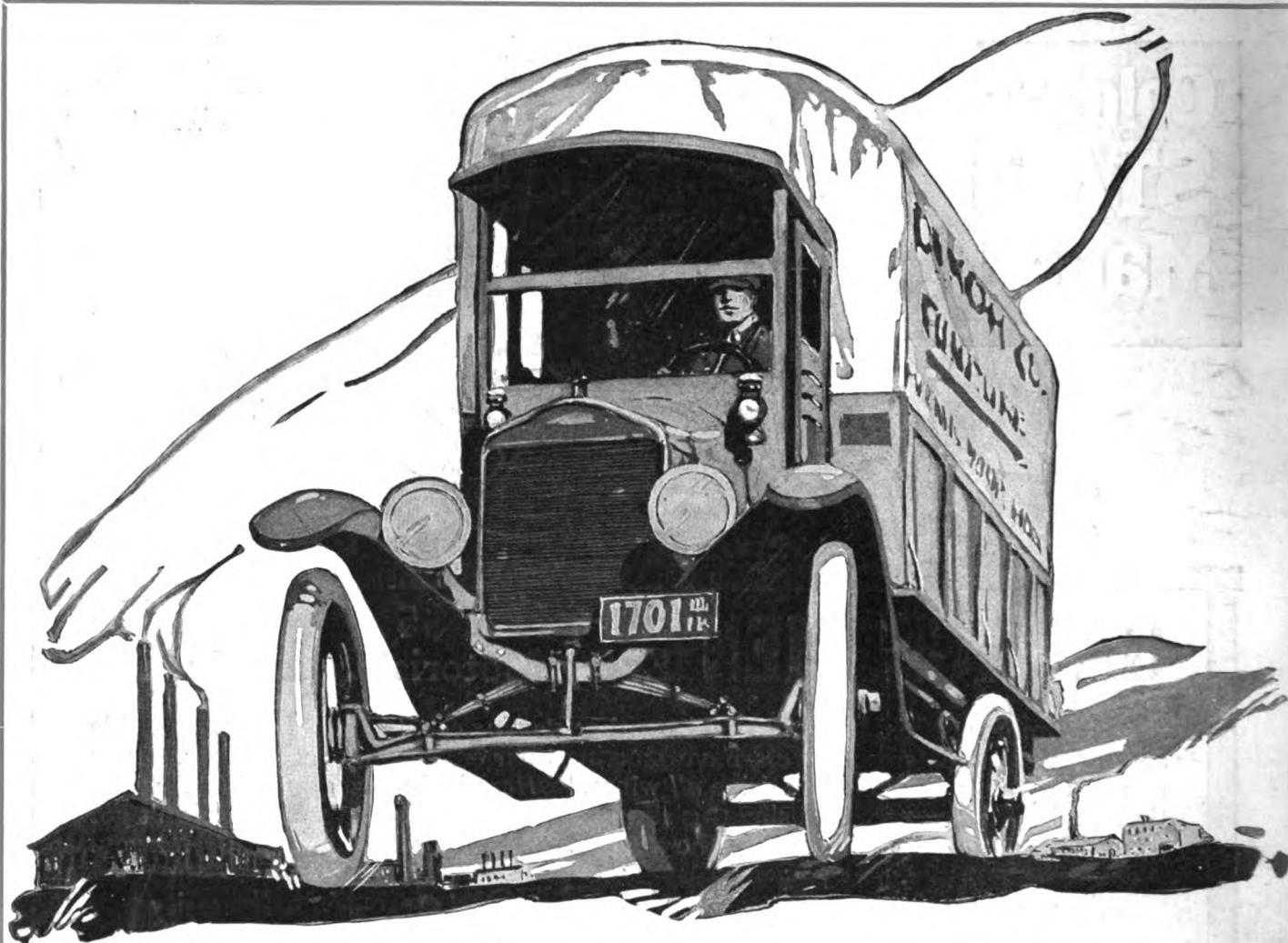


Gives Your Spark Plugs  
Fireable Gas to  
Bite on



Patronize our advertisers and build up your Association and Journal





**Equally Adaptable to Every Line of Business**

**Smith  
Form-a-Truck  
\$350**

F. O. B. Chicago

Smith Form-a-Truck dealers are uniformly the most successful dealers in motor trucks in their territories.

Smith Form-a-Trucks are in use in practically every line of industry in all parts of the country.

They are in use hauling soil from excavations—delivering furniture—carrying mail—doing general hauling on the farm—covering the delivery routes of laundries—groceries—department stores—doing livery work as busses. Practically every type of body ever used on a motor truck is being used on Smith Form-a-Trucks.

In every service it is maintaining the remarkably low average hauling cost of less than 7c a ton mile, exclusive of driver's wages, and is duplicating in service the most expensive trucks built.

***Smith Form-a-Truck Co.***

Executive Offices and Salesrooms, Suite 984 Smith Form-a-Truck Bldg.

1470 South Michigan Avenue, Chicago, Illinois

*Eastern Branch*  
1834 Broadway, New York

*Pacific Coast Branch*  
Pico and Hill Streets, Los Angeles

*Southern Branch*  
120 Marietta Street, Atlanta



# AMERICAN GARAGE AND AUTO DEALER

OFFICIAL PUBLICATION OF THE A.A.C.O.



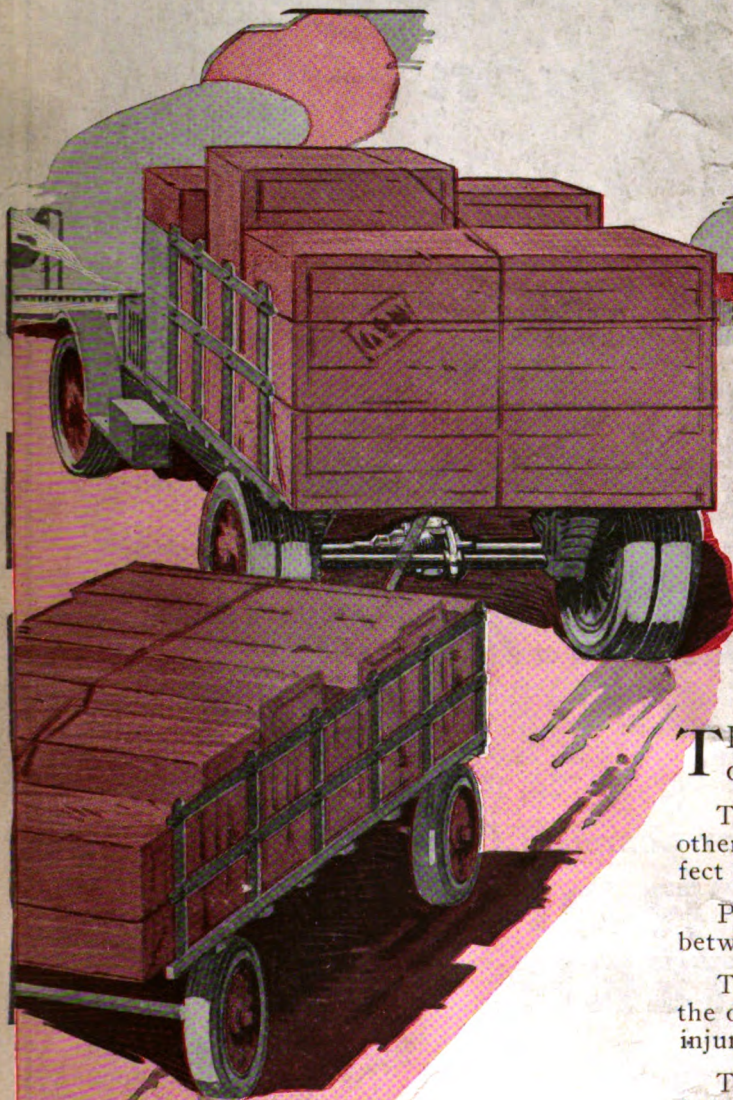
Volume 7  
Number 7

CHICAGO

DECEMBER, 1916

\$1.00  
Year

TORA  
X



## Russel Internal Gear Drive Axles

### The Third Degree

**T**RAILERS put the lubrication of your truck drive axle through the third degree.

The efficiency of drive shaft axles for motor trucks, other than the Internal Gear Drive, depends upon perfect lubrication.

Perfect Lubrication means a constant film of oil between working parts.

The continual heavy jerking, the trailer inflicts on the drive axle of the truck, breaks this film of oil and injures the drive axle very seriously.

The efficiency of the Russel Internal Gear Drive Axle is not dependent upon perfect lubrication.

As an example, one truck using a Russell axle was driven 30,000 miles not as a test, but in actual service, with but one supply of lubrication for the axle.

Let your next motor truck be equipped with the Russel Drive.

**Russel Motor Axle Company, North Detroit**



*Note—We are going to publish a series of "true stories" relating the actual experiences of Detroit Battery dealers in large cities and small. These will be much more convincing than any statements we might make.*



## **True Story No. 1**

# ***about D. P. Sweager - of Marion -***

**M**R. D. P. SWEGGER ran a battery supply and service station in the town of Marion, Ohio.

Business proceeded fairly well, but it did not grow as rapidly as Mr. Sweger thought it should. There was a brake dragging somewhere. Customers didn't "stick" as they should. Complaints were a little too frequent.

Sweger was not the sort of man to be satisfied with a "fairly" successful business.

He analyzed his business thoroughly. He made comparative tests of different batteries. The result was that he switched to the Detroit Battery.

That was six months ago. This change released the brake on his business. Since then, he says, "business has grown surprisingly."

Customers come back to him again and again and send their friends.

He surprised one man who required a part that had to be shipped from the factory by having it for him the next day after he asked for it.

This was possible because all except specially made parts are shipped within two hours after the receipt of mail, telegraph or telephone orders. This is the sort of service that helps dealers hold customers and get more.

Sweger says that it is no wonder his business is growing, for not only is the Detroit battery longer lived, but the service is more prompt than he has ever had before. He says that one point that appeals to him particularly is the fact that "the plates do not warp."

### ***Dealers, Think of This a Moment***

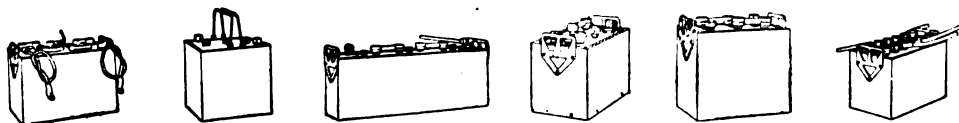
The battery business is a wonderful profit maker. Few districts have enough service stations. Competition is less than in other branches of the supply business. Batteries are a necessity. They are a resale proposition. You sell the same customers again and again. It is a permanent business—an undeveloped, growing business.

We will help you start in this line—furnish you with advertising matter—show you how to advertise to get customers, and provide complete equipment for charging and repair work at minimum cost. This help, together with the exceptional quality of Detroit Batteries and service, makes success assured.

We will be glad to show you a complete proposition, showing costs, probable profits, etc.

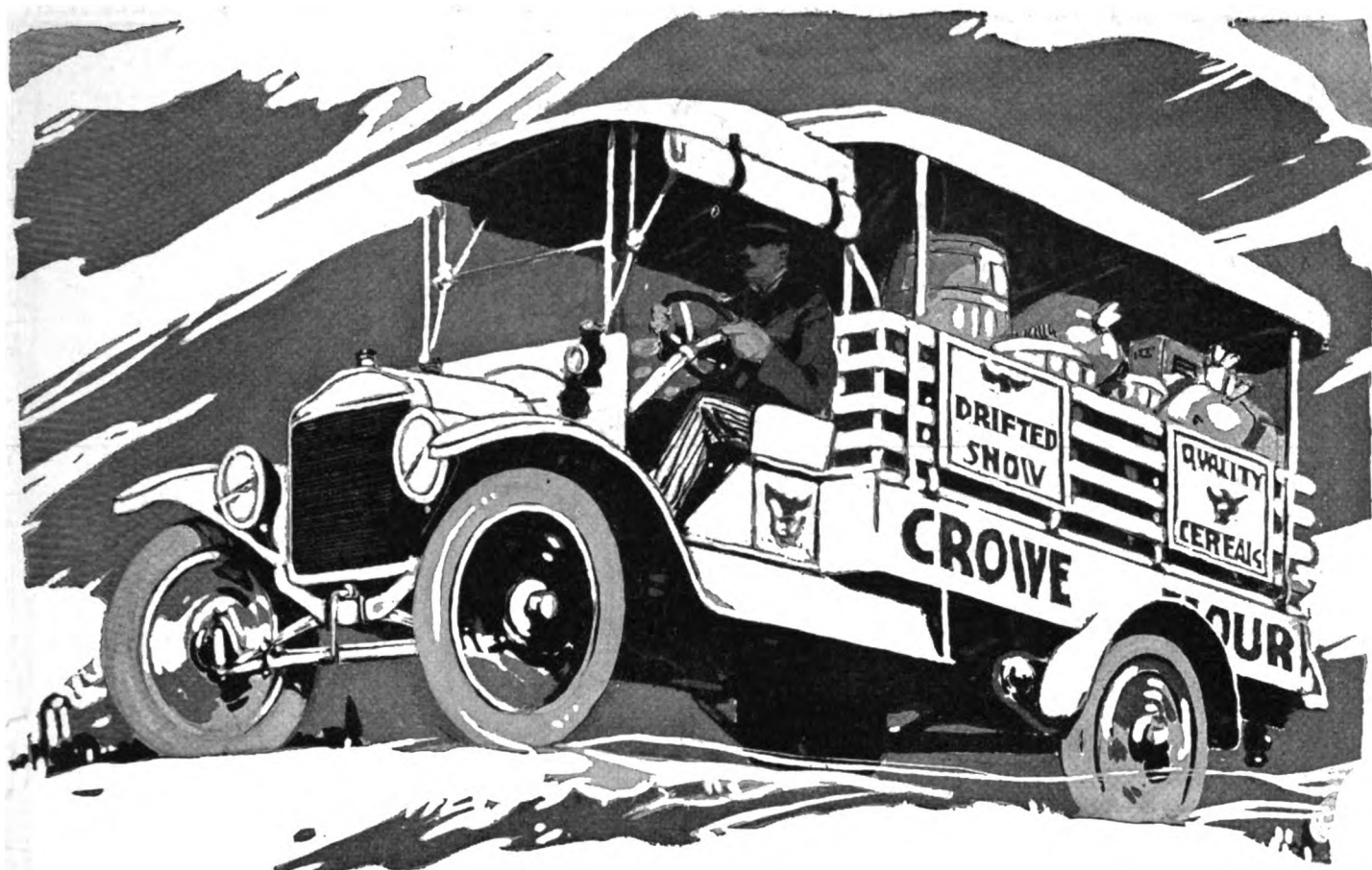
***Send Today for Complete Details***

# **DETROIT BATTERIES**



A Correct Type for Every Make and Model of Car

**DETROIT BATTERY COMPANY - DETROIT, MICH**



## Less Than 7c a Ton Mile for Hauling

**Smith**  
**Form-a-Truck**  
**\$350**

F. O. B. Chicago

Smith Form-a-Truck dealers are the biggest single factors in motor truck service in their territory.

The average hauling cost per ton mile for Smith Form-a-Trucks, secured through compiling the cost sheets of thousands of owners in all parts of the country, is less than 7 cents.

This cost is uniform regardless of the work the truck is doing and applies equally well to the large and small user of Smith Form-a-Truck service.

It is from 30% to 50% lower than that of any other form of delivery or hauling service either horse or motor drawn.

The approval of Smith Form-a-Trucks by big business is shown in single orders for fleet equipment ranging from 20 or 30 units up to more than 200, while thousands of small users are ordering from one to several to meet their requirements.

### Smith Form-a-Truck Co.

Executive Offices and Salesroom, Suite 984 Smith Form-a-Truck Bldg.

1470 South Michigan Ave., Chicago, Illinois

*Eastern Branch*  
1834 Broadway, New York

*Pacific Coast Branch*  
Pico and Hill Streets, Los Angeles

*Southern Branch*  
120 Marietta Street, Atlanta

Patronize our advertisers and build up your Association and Journal

# Cold Weather STARTING Made Easy



PRICE  
\$5  
Ten Days Trial Free. A Big profit for You

## GARAGE MEN Here Is a \$5 Article That Every Motorist Is Looking for

A *real* priming outfit that makes cold weather *starting* easy! You know the trouble all motorists and truck drivers have starting their engines in cold weather. It is money in your pocket if they drive *all* winter! *Here is the remedy for it!* Already thousands of car owners are using this simple, easily-installed outfit and couldn't get along without it. Fourth year on the market. Hundreds of sales waiting for you.

Sprays Vaporized,  
Fireable Gasoline  
Into the Manifold

# Imperial Primer

A Necessity  
not an  
Accessory

Consists of a small, substantially-made plunger pump, all necessary bolts, connections and tubing furnished, ready to mount on the dashboard of any car, any model. All connections made by the well-known Imperial Compression Couplings. No soldering, no flaring or threading required except on manifold. So simple to put on that any motorist can install the outfit. Never wears out.

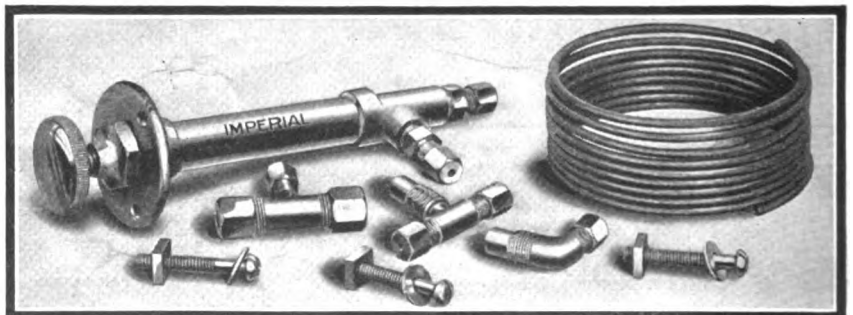
**A Good Profit for You—No "Come-Backs"—If Your Jobber Cannot Supply You, Write Us Direct.**

The Imperial Primer is every bit as necessary on cars having self-starters as those cranked by hand. It saves batteries, gives a quick, positive start on the *first* turn-over. Eliminates the irritating job of pouring raw, lifeless gasoline in the priming cocks, which is enough to spoil anyone's temper.

Make YOUR place of business headquarters for the big demand for Imperial Primers in your neighborhood which is sure to follow our big national advertising in *The Saturday Evening Post*, *Literary Digest*, etc. Get in on these good profits. Act today.

### IMPERIAL BRASS MANUFACTURING COMPANY

529 S. Racine Avenue  
CHICAGO, ILL.



Patronize our advertisers and build up your Association and Journal



## A Guaranteed Carbon Remover

**A QUICK SELLING and Very Profitable** accessory for the Automobile, Motorcycle, Motorboat, Motor Truck and Gas Engine of every description.

## JOHNSON'S CARBON REMOVER

Every Johnson Product for the auto trade **has proved a winner**, both for the dealer and user. Johnson's Carbon Remover, our latest scientific triumph, **pronounced Perfect** under every test, is now ready for the market.

Get the benefit of the big initial campaign. Our extensive advertising campaign, the merit of Johnson's Carbon Remover, our unsullied reputation, **and positive guarantee** of both **article and sales**, make it the strongest backed up preparation ever offered to the trade.

Johnson's Guaranteed Carbon Remover is **attractively put up** in quart, pint and half-pint cans, and, **inasmuch as we absolutely guarantee both the sale and the article**, you run no risk.

### NATIONALLY ADVERTISED

We have made a large appropriation for advertising Johnson's Carbon Remover. Page ads—most of them in color—are appearing in all the motor magazines as well as in the leading weeklies and monthlies. John's Carbon Remover has revolutionized the carbon removing business. **Your customers will be clamoring for it** within the next thirty days.

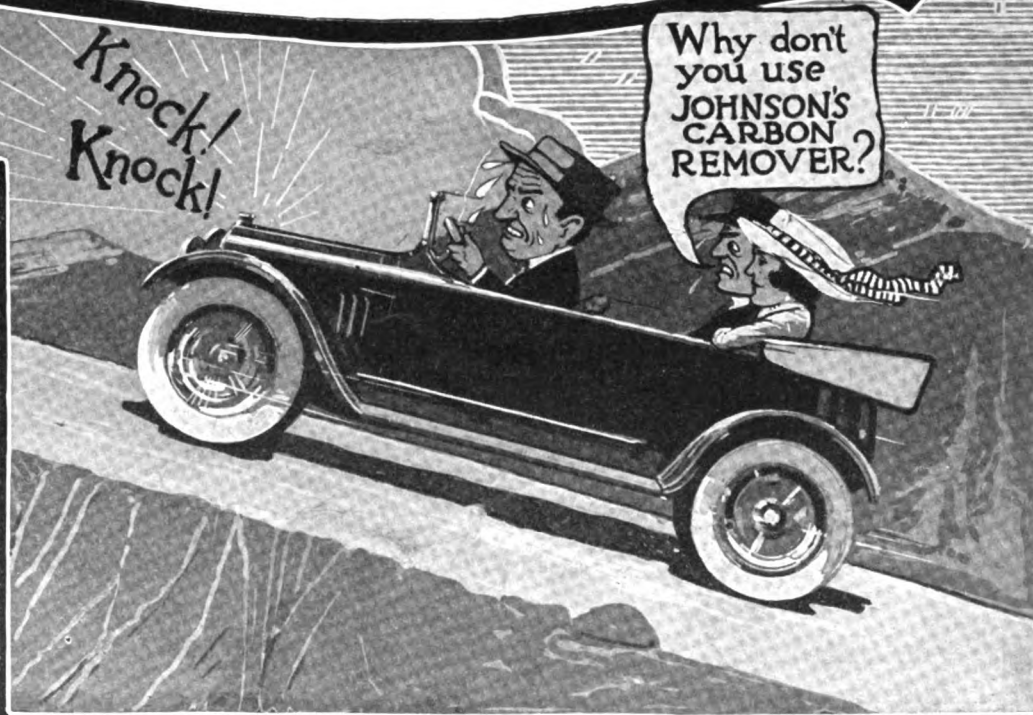
**DO IT TODAY!** Order today and cash in on the campaign which will soon be at its height.

**Johnson's Carbon Remover Guaranteed Unconditionally**

### GUARANTEE

You take no chances. We guarantee Johnson's Carbon Remover without equivocation, both as to article and sales. **No matter how much you use or how you use it, Johnson's Carbon Remover cannot injure any part of the motor.** You could soak your engine in it for days without the slightest injury. We guarantee this.

**S. C. JOHNSON & SON**  
Dept. AG12, RACINE, WIS.

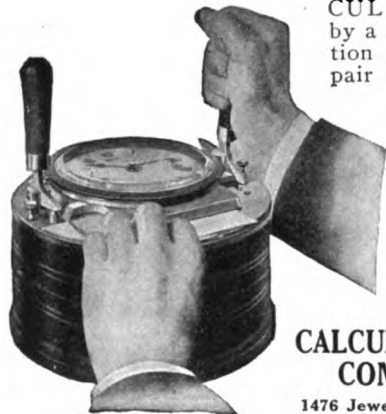


Patronize our advertisers and build up your Association and Journal

## CALCULAGRAPH YOUR REPAIR CHARGES AND PREVENT DISPUTES

Stamp all your repair and charge tickets with a CALCULAGRAPH, then if your customer complains, show him the CALCULAGRAPH ticket which contains a record of ELAPSED TIME (actual working time).

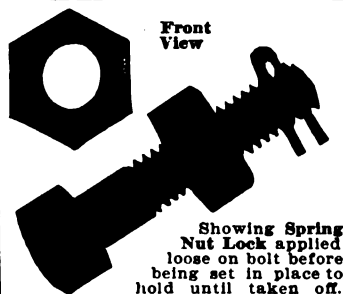
Satisfied customers will soon pay for the cost of a CALCULAGRAPH by a standardization of your repair charges.



Write for booklet illustrating a complete set of forms for a simple garage cost system.

**CALCULAGRAPH  
COMPANY**

1476 Jewelers Building  
New York City



## Why Not Be Sure

that every part of the engine; chassis, or body of the car you make will **stay together** until taken apart?

## Spring Nut Locks

are the simplest, surest, safest device to **positively lock** any nut on any bolt. Resists all vibrations. Cannot harm threads. Easily applied. Released whenever desired.

### Cheapest and Best

**Manufacturers, Jobbers, Garage Men, Repair Men and all Dealers** should write for prices on sizes now available. Orders filled in rotation. All sizes by January 1st.

**Spring Nut Lock  
Company**

643 Transportation Bldg.  
Chicago



## Air Compressors

Designed and  
Constructed for  
Service

## Spacke Air Compressors

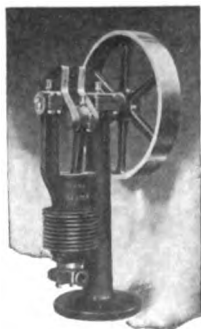
are built in all capacities and models, and is the only line enjoying the distinction of embodying all the necessary features of a durable and efficient compressor.

Every unit of a Spacke Air Compressor is constructed with the utmost care and of the best possible material in order to meet the severe service which is imposed on them—they are built to last.

Write us your requirements  
and we will save you money

**THE F. W. SPACKE  
MACHINE CO.**

INDIANAPOLIS, - INDIANA



## Wear Your Tires "To The Bone" Without A Puncture

The Secret  
is in  
This Can



Let Your  
Tires  
in on it

**TIREOID**  
"IT SEALS PUNCTURES"

What value do you place on the clothes you ruin in six months, mending punctures on muddy roads and greasy streets?

From \$10 to \$16 worth of TIREOID assures you immunity from punctures for an indefinite time. If it fails, we give you a bullet-proof guarantee to return your money any time within six months.

### YOU SAVE YOUR TIRES, YOUR CLOTHES, YOUR DISPOSITION

TIREOID is a semi-liquid mineral product which is inserted in your inner tubes. It heals a quarter-inch hole instantly without loss of air. You never remove a tire until it is worn "to the quick." Here are some of the automobile men who are backing TIREOID—their names tell the story: C. W. Price, president Overland Motor Co.; James Levy, president Chalmers Motor Co. of Ill.; F. E. Price, vice-president Anderson Electric Car Co.; Lafayette Markle, president L. Markle Co., Studebaker distributors.

OUR AGENTS EVERYWHERE will be glad to give you a demonstration and explain our money-back-if-it-doesn't-guarantee. Our prices are \$10 for set of 3 or 3 1/2 inch tires; \$13 for 4 or 4 1/2 inch tires; \$16 for 5 or 5 1/2 inch tires.

THE TIREOID COMPANY, 1200 Michigan Avenue, CHICAGO

# AMERICAN GARAGE AND AUTO DEALER

FOR THE GARAGE-OWNER, AUTO-REPAIRMAN AND AUTO-DEALER

PUBLISHED  
The AMERICAN ASSOCIATION

IN WHICH HAS  
GARAGE EFFICIENCY AND



MONTHLY BY  
GARAGE OWNERS

BEEN INCORPORATED  
RETAIL MOTOR TRADE JOURNAL

Vol. VII. No. 7

New York—CHICAGO—Detroit

December, 1916

C. M. CARR, Editor and Manager

J. R. KELSEY, Business Manager

J. R. HASTIE, Advertising Manager

E. B. HINRICHSSEN, Technical Editor

CHAS. C. BOMBAUGH, Law Editor

Entered as second-class matter, March 1, 1916, at the Post Office at Chicago, Illinois, under the Act of March 3, 1879.

Subscription Per Annum (Postage Paid) \$1.00. Advertising Rates on Request.

## THE AMERICAN ASSOCIATION OF GARAGE OWNERS, INC.

A corporation not for profit, organized under the laws of Illinois.

General Headquarters, Chicago, Ill.,  
53 W. Jackson Boulevard, Telephone Har. 5672.

New York Office: 52 Vanderbilt Avenue,  
F. L. Hadley, Manager.

Detroit Office: 901-902 Kresge Building,  
Robert M. Smith, Manager.

### Objects of the Association

Section 1. To carry into effect, in the operation of the business of our members, the idea embodied in the slogan, "Safety First," in order that membership in the association will insure to the public that quality in service in repair work and service identical with the highest safety and values.

Sec. 2. To devise ways and means of establishing standards of safety and values that will be in harmony with the cost thereof, and of lowering costs to members and patrons.

Sec. 3. To act together through the general headquarters of the association in such practical ways as to create an adequate standard of profits for members, consistent with the capital employed by them and the service rendered to patrons.

Sec. 4. To promote by every means in our power measures and legislation which will give to our members the same legal protection which is now enjoyed by the building material trades, hotelkeepers and others catering to the public in like manner.

Sec. 5. To unite individual garage owners and associations of garage owners in a central body for the improvement of business as repair men, storage and livery men, and dealers.

Sec. 6. To co-operate with other organizations having similar aims.

Sec. 7. To secure and disseminate to persons and members identified with this association all legal and other proper information which may be of value to them in the prosecution of their business as public garage owners, auto-repairmen and automobile dealers.

Sec. 8. To publish such magazines, periodicals, bulletins, etc., as may be required from time to time for the purpose of supplying vehicles for the dissemination of such information as referred to in the preceding section.

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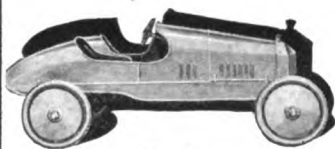
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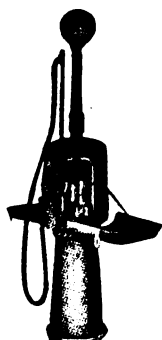
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# AMERICAN GARAGE AND AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE,  
GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. VII. No. 7

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## Essentials to Garage Success

THERE are a number of essentials to success in the operation of a garage—success in a worth-while way. These essentials may be likened to the price of admission to the circus. Occasionally a “smart Ike” may crawl in under the canvas, but the generality of us must pay the admission price.

The essentials I have in mind are: (1) Cleanliness and Order, (2) Publicity and Advertising, (3) Efficiency and Service, and, last but not least, (4) Accounting and Collections. The order in which these essentials are enumerated is not material.

(1) Before me lies a letter from the biggest man in the auto industry and he lists a number of causes that militate against the success of the garage business. He places the “dirty appearance” of the garage first. Sleek up, brothers; keep your places tidy and in order. Don’t drive away trade by making your places unfit for the storage of classy equipages.

(2) Publicity like that contained in the Walt Mason feature page and the Hinrichsen article, both in this issue, should be employed in every community to offset the pernicious doctrine of “Car owner, be your own mechanic,” so industriously preached by the motor and daily press. Local associations should have charge of this publicity work, and it should be supplemented by the modern trade advertising of enterprising individual garagemen.

(3) Every business must stand or fall on the items of efficiency and service. The two are identical yet different. There can be no efficiency without service and no service without efficiency. Frame up your business scheme to produce a fair profit, then glue your eyes on the efficiency and service phase of your activities. This rolls up volume. “The tail goes with the hide”—profits will then automatically follow efficiency and service.

(4) Accounting and collections are the sheet anchor of a business. Here simplicity and effectiveness are prime requisites. We are showing our members and friends how to take the book out of bookkeeping—abolish red tape, plug up leaks, banish “forgot-its,” and get the money due in the simplest and most economical manner.

The A. A. G. O. is doing yeoman service along all of these lines, and this service is increasing in value. Don’t neglect to read the article in this issue by Mr. Fast—it will open your eyes to important and startling possibilities. Other items on our “Big Four” program of successful handling of the garage business (or any of its subdivisions such as car, accessory and supplies, retailing, repairing, storage, etc.) will be treated with greater clearness and practicality from month to month. So keep next.

*C. M. Carr*

Secretary-Editor.



# The Editorial Point of View

## The Big Show and Convention

THE Chicago Automobile Show this year is to be the finest and biggest in the history of the automobile industry. Every garageman, shopman and dealer who can possibly do so should visit this show for the education it will bring him in the way of up-to-date information that can be made practical use of in his every-day operations.

The show is not the only attraction in Chicago during the week of January 27-February 3. The annual convention of the A. A. G. O. will be held in this city at the Auditorium hotel, February 1-2, and all garagemen, shopmen and dealers, whether members of the association or not, are invited to attend the sessions of the convention and the banquet on the evening of February 3rd. The convention program will be highly educational in a practical sense and, after spending a week in Chicago, or even part of the week, which will include an inspection of the exhibits at the show and the two days' session of the convention, you will go away with a fund of information and a stimulus that will be helpful to you in all of your affairs at home throughout the entire year to come.

Let every member of the A. A. G. O. and every reader of the AMERICAN GARAGE AND AUTO DEALER plan to attend the convention and show. Strain a point if necessary to do so. You will be welcome at National Headquarters, and every effort will be made by your officers to give you a good, as well as a profitable, time.

## Improving the Service

THE A. A. G. O. services to members are being made use of more largely from month to month, to the great convenience, protection and saving of the beneficiaries, and in order to increase their availability and value, members are requested to *use the wire* whenever necessary.

If a member requires important legal information at once and cannot wait upon the slower methods of the government mail service, a telegram to National Headquarters will meet the requirements. Every facility of the Association will be employed to get the information to the member without a moment's unnecessary delay and it will entail upon the member no expense except the cost of the telegraphic inquiry which should be *prepaid* and the reply which will be sent "*Collect.*"

This improved service applies also to our Mechanical and Engineering Department, Bureau of Registration of Automobile Mechanics, Employers Employment Service and all other departments of our A. A. G. O. work.

Use the wire, brothers, when necessary. Otherwise, write. These services are *free to members* in good standing and are yours for the asking. We have already saved members thousands of dollars, solved many of their problems, and aided them in numerous ways, through the services that have been provided exclusively for them.

## Look Out!

IN the "Look Out!" column of this journal warnings are issued from month to month to the garage, shop and dealer trade designed to prevent their being imposed upon. Most of these warnings emanate from the field, some of them do not. In most instances some member or reader has been "stung," and by giving us the facts they can be published in this journal, then clipped out and pasted into the A. A. G. O. Protective Register where the articles are indexed and made accessible for ready reference when the suspicion of fraud or deceit is aroused. (You should have one of these registers if you have none.)

But here is a "Look Out!" that applies to another matter. Mr. Garageman, you subscribe for trade papers supposedly devoted to the special interests of your trade. Do you read them carefully? You should. Note that some of them maintain a mechanical advice department which tells the car owner how to fix his car, and in literature used to obtain the subscription of car owners they plainly state that by reading this particular department *owners can save garage bills*. Testimonials are used in the canvass to the effect that car owner readers *have saved garage bills*—in other words, deprived you of just that much legitimate trade.

In view of this, we say, "Look out!" Why support in any manner publications that pretend to be for you and are thus pulling down the pillars in the structure of your business? No trade paper can legitimately solicit consumer trade or cater to it. It is disloyal to its proper constituency when it does. A dealer and garage publication cannot be loyal to you when it seeks by any means whatever to lessen or divert patronage that should come to you from the motoring public.

"Look out!" and stand by those who stand by you."

## Helping (?) the Car Owner

**C**ENERGIOUS praise is due the motor press in the work it is doing to make the use of auto cars more pleasurable. As an ally of the good roads movement and a disseminator of useful information about routes, traffic regulations, the newest car models and accessories, and the art of driving and managing a car when on the road, it is all that could be desired.

What we have said relative to the motor press may also be said with equal truth, only in a lesser degree, of the motor car sections of the daily press.

This work constitutes expert service and is productive of important and far-reaching benefits. It stimulates and improves the entire auto industry and tends to popularize a diversion which makes for health, longevity, a broader knowledge of the country in which we live, and a kinship among men and in the family life that is wholesome and beneficial in every way.

But—

When it comes to teaching the car owner to become his own mechanic, when it seeks to convert the mass of tired business and professional men, embryo and full-fledged, seeking relaxation and the fine exhilaration of motor driving or riding, not only into expert chauffeurs but into mechanics and engineers, the motor and daily press leaves the platform of rational recommendation and advice and descends to the plane of quackery and deceit. The help (?) offered the car owner is the same character of help that the cure-all doctor renders the sick, the advice sharp renders the investor, and the soothsayer and clairvoyant renders the credulous. It misleads, it deceives, it steers into trouble.

The average car owner is not a mechanic and incessant urging that he become one and the persistent assertion that he is not as smart as his neighboring motorist unless he does so is little short of criminal. The pleasures of motoring are in a large majority of cases offset, or nearly so, by the irritation and bad temper engendered by the constant tinkering his car requires, whereas a more rational and logical course would give him the delights of car ownership and use without its needless handicap, and at probably little or no extra expense.

Walt Mason in a feature article on the next page of this issue hits off the situation in his own inimitable style, comparing his car to the horse he formerly drove. His experience is commended to all, as it is the experience of the writer of this editorial and thousands of other car owners who hire a mechanic when the car needs expert attention, the owner confining his efforts to the proper handling of the car when on the road. The owner-

tinker not only spoils his disposition but also his car and in the end is compelled to go to the garageman for help and pay a garage bill, probably all the larger because of delay and the amateur adjustments and repairs attempted by him.

Garagemen, use your best publicity facilities to educate the public to a recognition of the fact that the "Be your own auto mechanic" advice is predicated upon as pernicious a doctrine as "Be your own watchmaker," "Be your own veterinarian," "Be your own lawyer," and the hundreds of other "Be your owns" which have swept the gullible and careless off the feet of tranquillity and landed them into the abyss of trouble and despair.

Cut out the Mason page referred to and post it in your garage or shop. It will be read with interest by many and aid in widely delivering a message that will prove beneficial alike to you and the car-owning public.

## After the War—What?

**T**HE cheap politician during the recent presidential campaign attempted to "throw the scare" into the business public and those dependent upon it by picturing the awful things that were going to happen in the U. S. A. after the war, if—well, the qualifications are immaterial.

Now, let us look into this "After the war—what?" proposition and use a little common horse—no, motor—sense in our consideration of it. The first thing that will happen after the war will be the task of rebuilding wrecked and ruined Europe, a task so stupendous as to stagger the imagination. American money, material and men will be needed then and for several years after peace has been restored. Isn't this true?

The dock warehouses full of manufactured goods to be shipped over here after the war are mythical, and the flood of other goods which will follow the conversion of their present munition factories into merchandise-producing plants is a delusion or dream. All the goods that can be produced over there will be needed at home after the war and more, and any exports likely to result will be more than offset by imports, with a gold payment balance in our favor. The United States now possesses more than one-third of the gold supply of the world and after the war this supply is more likely to increase than to decline for some years to come. Isn't this reasonable?

The scare thrown into us by the politicians extended to the motor trade and visions of cheap automobiles flooding this country after the war were heralded by the newspaper piffle-purveyors. Of course, Henry Ford, John Willys, Nash, Chalmers and the rest of the boys in this class—poor fellows—need our sympathy. Nobody but the opulent garagemen will escape the ravages



# Be Kind to Your Car

By WALT MASON

*EDITOR'S NOTE—For plain, horse sense; for practical philosophy founded on real wisdom; for perfect mastery of a kind of English which anchors every one of the homely truths he utters either in prose or rhyme, commend us to Walt Mason. He is the most widely read writer in the world—and justly so. In the following article the nub of his argument is: "You wouldn't take a broken watch to a blacksmith. Then why tinker with a broken car? Why not summon a competent mechanic and let him break his heart over it?"*

WHEN I bought a motor car, the dealer, a conscientious man, insisted upon explaining all the various parts and their functions. I begged him not to waste his time and my time. I didn't want to know anything about the various parts.

"Just show me how to put on a tire if I bust one," I said, "and where to pour in the gasoline, and that's all I want to know. I don't want to be able to distinguish the carbureter from the differential. If anything goes wrong with my car, I am not going to feed it condition powders. **I am going to summon a competent mechanic, and let him break his heart over it.**"

There was a book of instructions with the car, and the dealer begged me to read it, but I haven't done so. Why should a man read a book of instructions, full of tiresome diagrams, and long lists of "don'ts," when he can get a good fiction magazine for 10 cents?

Before becoming an auto fan I was a horse fan. For twenty-five years I always had a good horse and sometimes several.

When you buy a horse you don't get a book of instructions with him or a diagram showing all his parts. You may examine the exterior of the animal, but his works are a sealed book to you. You take it for granted that he has the customary organs and that they are in their proper positions and doing business at the old stand.

I owned so many horses and had such uniformly good luck with them that I acquired some local reputation as a horseman, and friends who contemplated buying roadsters often asked my advice. But if anybody had asked me whether a horse's liver is in front of or behind his wishbone I couldn't have told. I never bothered about my horse's insides. **So long as he delivered the goods, I didn't care whether he was hollow or packed with organs.**

If anything went wrong with him I didn't try to take him apart and fuss with his mechanism, I summoned a veterinary surgeon and told that learned scientist to do

his worst. I noticed that people who doctored their own horses usually had to bury them. And, as I have said, I always had excellent luck with horses.

I run my car everywhere, over all kinds of roads, and never lift the hood to see the wheels go round. The dealer told me it has six cylinders, and, as he has the reputation of being an honest man, I assumed the blamed thing has six cylinders, but I don't know or care. And I never have any trouble when I am driving. When I take a long trip I hire an expert chauffeur, and as soon as he is at the helm the trouble begins. We have punctures and blowouts and all the misadventures and misdemeanors you can think of, but nothing ever happens when I am driving.

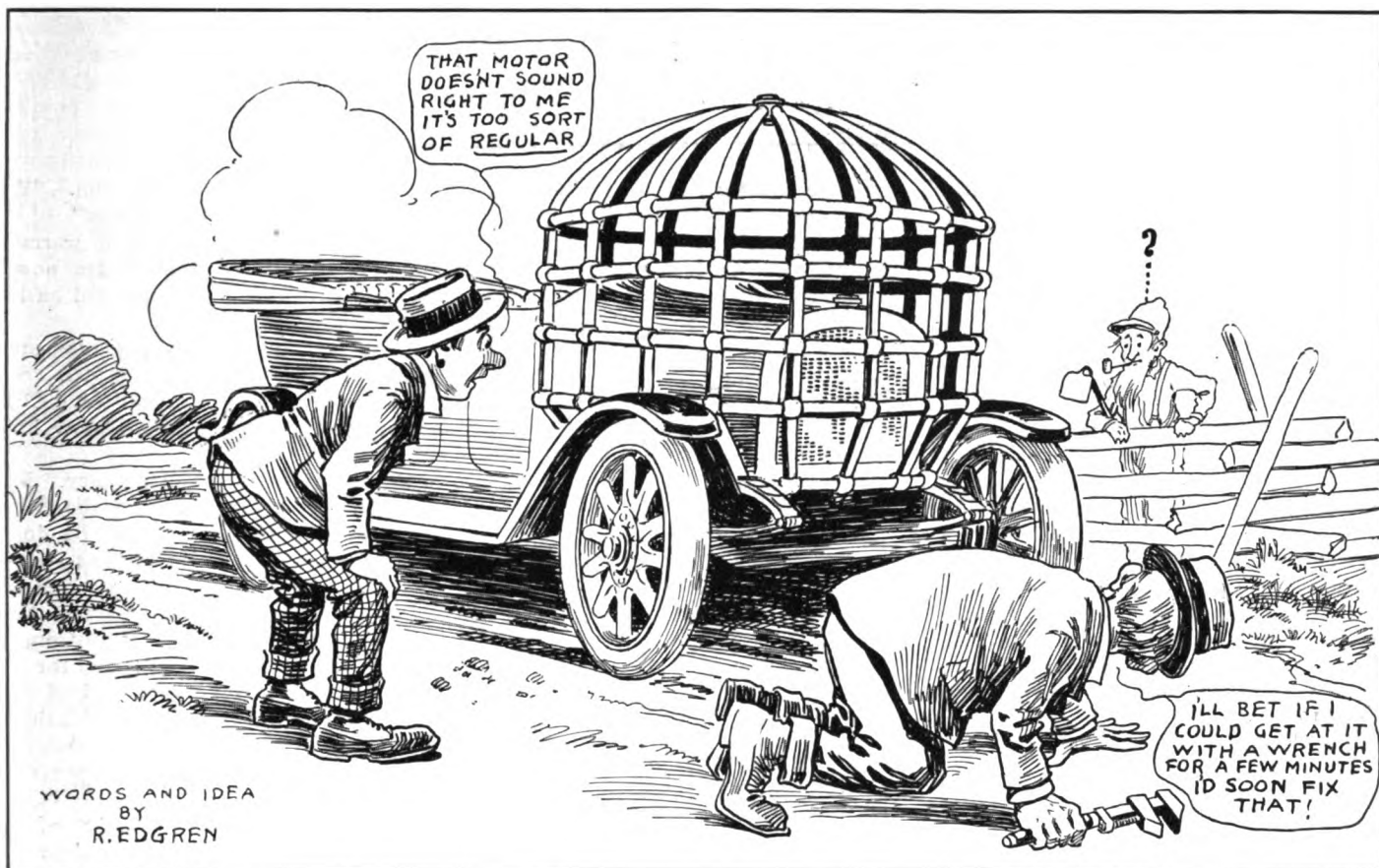
Most of my neighbors have cars and they all have trouble. They read the book of instructions carefully and they are always trying to familiarize themselves with the working parts of their cars, and grief is their portion. One of my neighbors bought a car when I did, and he is always tinkering around with a wrench or pair of pliers and he gets himself covered with grease and perspiration and his car is always out of order. He spends most of his pocket money hiring other people to haul him home.

When I drove horses I discovered that if they were abused or overworked they soon played out and had to be disposed of at a rummage sale. A good horse will last twenty-five years if judiciously used, but if he is slammed around as though horses grew on trees he is ready for the scrap heap in a little while.

If you hear a man bragging that he trotted his horse uphill at full speed you assume at once that he needs a keeper, and it is just as foolish to overwork an engine.

The car that has a bonehead driver shows the results in a little while. It looks disreputable and it makes more noise than a minstrel show. But the car that has a common sense driver looks and performs as good as new when it has chewed up thousands of miles of the public highway.

## George Would Fix It—But Not This Suggested Model



Here is a car that will run smoothly and give service. Securely locked at the factory and the secret combination known only to competent garage mechanics. Joy, this will solve the problem of prohibitive upkeep for millions of discouraged car owners.

of this over-seas competitive onslaught, for it will make little difference to them whether they repair and store cars of foreign make, or if the contracts to handle cars are signed "by and between" them and foreign factory owners, provided the contracts are as one-sided and burdensome then as now.

"After the war—what?" Why, the same old "Get right up and dust" that we have now, and just as good a chance of getting the right sort of "dust" into our jeans pockets as there is now. The auto car is here to stay and nobody's "What?" is going to drive it away or keep it from multiplying. Only one thing can put it into a partial eclipse and that is the aeroplane—and your Uncle Dudley Garageman will be right there with storage and repairing facilities for planes which will equal his present facilities for auto cars when the change comes.

Brothers, we should worry.

### Prosperity and High Prices

**A**N investigation into prices and economic conditions in general has disclosed what to many persons will be a most startling fact, namely, that

the purchasing power of the dollar has gone down rather than the value of products gone up.

Our money and commerce are on the gold standard basis and the standard has slumped. In other words, gold is cheap in the United States because of its plentifulness due to the immense increase in our exports. With gold cheap, all other products whose value is measured in gold become dear. Hence the general rise in values from this one cause, evidencing the soundness of the quantitative theory of money. There are other notable advances in prices due to crop conditions, war demands, etc., but they are exceptional.

Prosperity engenders inflation and high prices. This is one of its inevitable penalties. Inflation is invariably followed by contraction. Therefore the careful business man and financier will steer a middle course. It is wise to take full advantage of the rising tide but it is equally wise to be prepared for the ebbing flow.

After the war closes, the influx of gold may or may not continue. Devastated Europe must be rebuilt and no cessation of business activity is at all likely, yet the conditions will be different and may differently affect the gold-other products teeter-board.

# How to Get the Tire Trade

## Story of an Experience Which Will Help the Retail Dealer to Get His Share of the Business

"What did that fellow want, Jim," Bill asked as his partner returned to the repair shop.

"Five gallons of gas, a quart of oil, and to know why in blue blazes the price of gasoline is so high," Jim replied, soberly.

"Didn't get your goat, did he?" Bill inquired.

"He sure did," Jim answered. "He comes around here when he runs out of gas and buys a few gallons. He came up with a full set of new tires and tubes this morning. 'Nifty lookin' tires,' I said. 'Yep,' he answered, 'an' I got 'em cheap, dirt cheap,' and he told me the price. We wouldn't have made any money if we had sold them tires to him."

"It beats me," Jim continued. "He goes downtown, buys his tires and pays cash for them, then comes here and gets gas and oil on credit."

"Something wrong somewhere," said Bill, thoughtfully. "Seems to me tires look better down town than they do here. We keep ours packed away where the light won't get to them, we sell one or a set, spend a half hour or more putting them on, and get our money in thirty to ninety days."

"Those fellows down town put 'em on," said Jim, "and sell them a blamed sight cheaper than we do, so what's the answer?"

"They don't pay as much for their stock as we do," suggested Bill.

"Mebbe not, but they pay somewhere near, pay high rent, insurance, advertising bills, and everything else, and the retail price is 'sposed to be standard; but he had a set of Skidless on, same kind we sell, and he didn't pay any more than we pay. It get's me," and Jim shook his head in a discouraged way.

### Where the Trouble Lies

Bill seated himself on a box and rumbled his hair thoughtfully. "I was figuring it up yesterday," he remarked, "and we have 150 owners coming here more or less regularly. I don't know what an average set costs, but I'm guessing that tires and tubes will amount to something like \$75 a year for every car, and one complete renewal every year is not placing the needs at a high figure." He drew a soiled slip of paper from his pocket. "I figured it out and it shows that if we sold all of them tires and tubes we ought to make \$1,687.50 from the sale of tires.

"Well," Jim answered, hopefully, "I

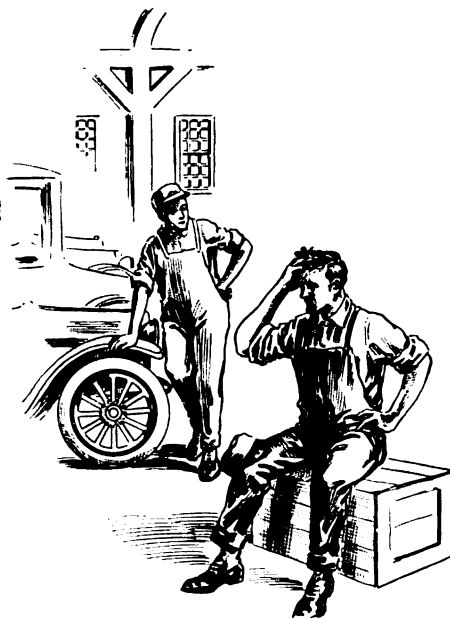
guess we are making the eighty-seven fifty, so it might be worse."

"Not our fault, either," Bill continued.

"If tires were the same price we'd get our share of the trade, but, shucks! some of the fellows who come in here say they buy casings and tubes cheaper than we can buy them."

"Well, what's the answer?" demanded Jim.

"Seems to me there is a law or some-



Bill Rumbled His Hair Thoughtfully.

thing that the manufacturers can use to make the dealer hold out for the set price."

"There is," said Jim, "but the tire companies have a lot of different prices, one for concerns like us, another for bigger fish, one for the big consumer, and one for the wholesale trade, so any price you get is liable to be a set price to some one."

"But there are a lot of salesmen who come in here and want us to put in a stock of tires. What do they think we can do with them?" said Bill.

"Sell them to the kids for hoops, I guess," said Jim.

### A Salesman's Solution

"Hello, fellows," boomed Wright, the salesman, beaming on the two idle men. "Got caught up with your work?"

"Well, after a fashion, we have," grumbled Bill.

"Took a squint at your stock room as I came by and looks to me like I'd get a fat order here.

"You sure will," declared Jim. "We got a whale of an order for you."

"Fine business," said Wright, warmly.

"Let's just get the items down now," and a ready order book appeared on his knee.

"You give him the order," suggested Jim, addressing his partner.

"The first thing we want," said Bill, slowly and distinctly, "is to know how to sell tires."

Wright rose to the emergency. Recovering his order pad from the floor, he said: "You've got me, boys. I don't know. We put out a lot of sales stuff—that is, the office does. We arrange for window displays, we make a fine tire, we print letterheads for our customers, furnish signs for your garage and for the roads leading to it. We do all of this for you and for thousands of others. Some of these thousands are doing a good business, some are in the same fix as yourselves."

"We knew all about that part of it," said Jim. "What we want to learn is how to furnish tires for all the cars of all of our customers."

"I don't know. That part of it is up to you. It depends on your ability as merchants. How do you get and keep your other trade?"

"By giving our friends a square deal," replied Bill, promptly.

"Try that idea on your tire trade," Wright suggested.

"Can't be done." Jim suddenly became very much in earnest. "A customer drove in this morning and got some gas and oil. He had a complete new set of your Skidless on his car. Bought them at the same price we have to pay. You talk about us becoming merchants. Do you suppose any merchant will put in a stock of goods, take all the risk of some fellows not paying, the loss from depreciation, and then turn about and sell the stock at the same price he paid for them?"

"Not if he is a merchant," declared Wright, decisively. "Now, if you will give me the names of the men concerned in that tire transaction we will look it up."

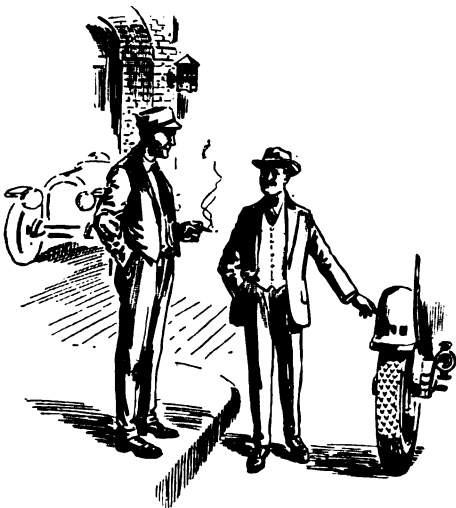
"No use, now," said Bill.

"There is considerable use. Selling to consumers at wholesale prices is against our policy. Whenever we hear of a case we investigate; and if the claims made are proven, the concern that made the sale is cut off our list. The big trouble



is we do not hear of these things until long afterward. Instead of writing us about such cases, you fellows lay down and then blame us for your failure to get the business.

"You must know," he continued, "that we can't watch every dealer and make him report every sale and then go to the customer and ask him if he paid full



"Nifty looking tires," I said.

retail prices. If you will report such cases to us or to the A. A. G. O. or to your local association we will be very glad to give you all the protection it is possible for us to give."

#### Tires of Standard Value

"Why haven't you asked us to make such reports?" demanded Bill, bluntly.

"That may be the weak link in the chain," answered the candid salesman. "I don't know and won't pretend that I do. Possibly the head office never thought of it. They have a lot of other things on their minds there, just as you fellows have. The big thing is that they are asking it now and they intend to give the dealer every possible protection and co-operation."

Jim then went on, having gotten warmed up to the subject: "A fellow down the street here is selling junk tires, we call 'em, and getting away with it. They don't look quite so well and sometimes they go to pieces after a 1,000 or 1,500-mile run, but he is selling them cheap, making a good profit and getting the business. We've been thinking some of putting in a line. How about it?" Jim asked.

"Go to it, if you want to. Personally, I haven't the least objection. The user of a re-made tire may get fine value for his money. If you knew the history of each re-made tire you might be able to tell something about its value.

"Our tires are made of new materials, carefully selected and put together by competent workmen. We are giving excellent value for the money. They are sold with a 5,000-mile guarantee, and that makes the mileage cost very light.

"Now, the big point is that 5,000 miles is the minimum service guaranteed the buyer. Our tires are averaging better than 5,000 miles, for we are called on to make adjustments on a relatively small percentage of the total sold.

"You can buy new tires that will just about make the guaranteed mileage and the tire is then all in and your customer must reinvest."

"Then we'd sell more tires," suggested Bill.

#### Retailing Customers' Goodwill

"The wise motorist buys mileage. That is what he pays for in the end. It costs more per mile to operate a big car than a small one, but a certain number of miles is what the motorist gets for his original investment and the upkeep cost. That is all he has to show for his money, the miles she runs and the pleasure and satisfaction derived from the trips made.

"If the car owner buys inferior oils, gasoline, tires and other supplies and accessories, he destroys the value of his investment, getting trouble rather than pleasure out of it. See the point?"

"You bet I do," said Jim. "When one of these cheap guys comes in and asks for a tire, just pump into him good and straight what-it-will-cost to send the wrecking-crew-out-to-bring-him-in dope. Tell him there is no fun in these one-way trips. I got that all right. What Bill and I want to know is how to sell your tires at list when they are selling them at 15 off down town?"

"You can keep a part of your trade,



"Fine business," said Wright, warmly.

regardless of the price. The other part you will have to scheme and contrive to get. The concern that sold Skidless at dealer's prices to one of your customers will not sell them at any price after his present stock has been exhausted if we can find him out. You can rely on that, and it holds good in a big, broad way

for everyone in the future. We can't expect you to ask and get the price unless others do."

"That listens good," said Bill.

"If you want to sell tires, talk tires and tire mileage, tire construction, tire values, to your customers. Tear the covers off several and put them in your window. When you send out your monthly bills and statements, slip in a tire folder. Print them yourself, if you want to; give your printer some of the money you are taking from the motorists. He's entitled to a part of it. If you do not care to go to that expense, use some of the folders we will be glad to furnish without cost to you, but remember they do cost money and if you ask for them, send them out—make them work for you.

"Now about that order?" this, hopefully.

"Bill'll tell you what we need," said Jim, walking thoughtfully away.

#### Glad to Help Retailers

"The longer I write material that goes to the garageman the more firmly I am convinced that what talks to him is actual experience which other people have had and stories that tell of the ways in which individuals have developed their business, organized their garage, or advertised to their prospects, is sure to get a hearing," writes Lyman L. Weld, advertising manager of the B. F. Goodrich Co.

"I am glad to do anything that I can do to help you induce the man who is selling cars or operating a garage to study his business for his own benefit and for the benefit of the business as a whole." Continuing, Mr. Weld says:

"The unprecedented strides which the business has made within the last few years are, of course, unexampled in all the annals of history, and it has resulted in boom conditions which must be overcome before the business is really put on a twentieth century basis of efficiency."

Mr. Weld stated that, in his opinion, the boom itself will pass but wise trade leadership should aid it in passing just as quickly as possible. For that reason he considers publications like ours which are essentially educational as a means toward the end desired. Too many people go to the garageman and auto dealer with good ideas expressed in a theoretical way and so do not properly impress the man who needs them the most.

Our Akron friend concludes his interesting and encouraging communication with the following:

"I cannot forget that we were all children once, and still are, and that our childish like for a story persists. Tell the garageman about his business in story form and you will have struck the keynote. More power to you."

### Selling Automobiles

Said a student of salesmanship:

"Automobiles are bought, not sold. When a prospective customer goes to a show or starts down 'Motor Row' in your town, if you have one, he is sold and is out to make a selection of the particular car he will drive; or, he may be sold even to that extent, and go direct to the distributor and order the car he wants.

"In the large cities automobiles are handled by branch houses or by distributing companies operating in certain prescribed territory. They are exclusive dealers, offering one car only, on which they are thoroughly posted.

"In the smaller towns, it might be said to be customary for the dealer to handle two types of cars, usually one of the large, high-priced type and one of the light, moderate-priced class. That arrangement was entirely satisfactory until the demand outstripped the supply. Then the dealer took steps to protect himself.

"After a man has made up his mind to buy a car, he wants it immediately, and the idea of waiting two to ten weeks for delivery does not appeal to him in the least. Many cars have been sold because immediate delivery could be made. To the buyer the automobiles appeared of substantially the same value, the "A" car at \$1,185 seemingly being as desirable as the "Z" car at \$1,215.

"Consequently, many wise dealers are handling both the A" and the "Z" and are diverting sales to the factory whose cars they can deliver."

In answer to the story printed in one of our recent numbers, an auto dealer friend of ours wrote:

"We are selling cars of any make to be secured; in fact, we are selling anything in the automobile line.

"In view of the failure to receive cars of a certain make after they have been sold, it is only reasonable and business-like for the dealer to be privileged to fill such orders with cars of other makes that are satisfactory to the customer."

Automobiles are being steadily improved. Each year's work of the thousands of engineers in the industry shows marked progress. Every one of an inventive turn of mind is endeavoring to perfect a new device or extend or improve the application of some mechanical principle to the automobile.

The outcome is a machine of greater convenience and reliability. Change for the sake of change is inadmissible.

Dealers as such are not vitally concerned in the mechanical questions which afflict the engineer. When such questions are solved and the outcome of that solution is embodied in a car, the dealer "talks the points" to his prospects.

Starting equipment has been provided for all makes of automobiles, for exam-

ple, and the dealer talks the convenience and satisfaction to be derived from such equipment. It is a part of his automobile "sales talk." It is just as much a point in favor of the "A" car as it is in favor of the "Z."

When a customer comes in and asks for a five-passenger "A" touring car and is informed that delivery cannot be made for six weeks, the dealer feels he has a right to sell a "Z" car of similar type, costing substantially the same money and being of approximately the same value. Both cars are turned out by responsible concerns and are built right in every way.

The dealer is in business to sell automobiles rather than for the purpose of promoting the sale and use of any particular make of car. He is beginning to realize that fact more and more and is reaping a profit from his realization. He no longer regards himself as the agent for the "A" car or the "Z" car in a thick-and-thin way, but as a dealer in automobiles, accessories and supplies, and engaged in the business for profit.

**ANNUAL CONVENTION**

**A. A. G. O.**

The Dealer and Service Organization of the Automobile Trade

**AUDITORIUM HOTEL**

**Chicago, Illinois, Feb. 1 and 2**

**During the Chicago Automobile Show**

Every Auto Dealer, Garageman, Repairman and

□ □ □ Serviceman should attend. □ □ □

### Fulfilling the Requirements A Fable, Perhaps

Once upon a time in the ancient long ago in the land of Getyours, Peter Sharp operated a garage.

He called it the Square Deal Garage, because he knew the corners on every deal which appeared not to the trusting motorists. Oh, yes, son, there were motorists in those days, or Peter Sharp would not have been in the garage business. The garage business does not pay where there are no motorists.

Peter's place was different. It was the only Square Deal Garage in the block. Peter had a good trade because the public thought the garageman should wear greasy clothes and use bad language, and Peter did both because he was an obliging fellow.

He sought to please every customer. That was his motto and he lived up to it.

One of Peter's customers thought all garagemen were robbers and thieves, so Peter met the expectations of that exacting individual. It distressed him sorely to disappoint any one.

"I want a quart of oil," said that customer one day, "and be sure you fill the measure lipping full."

Peter did not reply. How to please that exacting customer was his sole thought. He thought and thought all

the way to the oil house. Suddenly a way suggested itself. He took a quart measure that was .03 shy, filled it and gave his customer a measure full, which, he thought, was the same as full measure.

"It was full that time," growled the customer, who watched Peter sharply.

"It was," replied Peter, meekly. "I always give you full measure," and he charged the customer with a quart of oil, adding 5 cents for full measure.

### Quick-Selling vs. Slow-Selling Auto Accessories.

Marshall Field was considered the world's greatest merchant. Up to the present time, no merchant, not even John Wanamaker, has disputed the title. But Marshall Field's methods were not new in the sense that any of them could be secret. Any inquirer would have received a truthful answer on any of the points which made for the great merchant's success.

And the corner-stone of his success, aside from basic principles, was his insistence on selling any given article within a reasonable time. If such an article should have been sold within three months and was in stock for six months, the department manager heard of it. The article itself was put on the bargain counter for disposal and—never again, for that article.

The dealer in auto accessories is successful or otherwise by the measure in which his shelf goods move. There isn't an accessory he can carry with profit beyond a given time. It may be he overstocked on a good article but one such experience should be enough. If a gross is a three months' supply to his trade on a certain article, he is inviting disaster by buying a larger supply unless an undue profit is in sight. If his trade demands some established and well-advertised specialty, he is more than apt to meet financial loss by stocking an unknown and competing specialty.

Building on the principles necessary to the establishment and growth of the all-necessary good will, the accessory dealer cannot add a better motto than: "I will handle only those goods which I can sell reasonably, seasonably and profitably."

### Garagemen and Gasoline.

Gasoline is gasoline and oil is oil to most people, but it isn't. Poor quality of either will do more damage to the mechanism of a car than anything else. Garagemen should explain this to customers and make it clear to them that the car owner should be as careful in selecting his garageman as he is with his doctor, his druggist, his grocer and his baker. The internals of an auto are entitled to some consideration, eh?

# Standard Automobile Service

## Manufacturers Have Standardized Their Service Departments — Dealers and Garagemen Urged to Adopt Corresponding Methods

By H. W. DREW

Service Manager Nordyke & Marmon Co.

I will explain briefly the service organization in force among most of the large manufacturers, because I believe it is logical and rational for distributors and dealers as well. All of the company's business which has to do with the marketing of its product is divided into four groups, Advertising, Sales, Service and Accounting. The functions of the Advertising and Accounting departments are obvious and need not be discussed here. The dividing line between the Sales and Service departments is not quite so apparent. It is usually the case that the Sales department not only controls the promotion and completion of sales contracts, but also controls the placing of the order in the factory and delivery of cars to customers. Of course, this is with the co-operation of the factory production and traffic department organizations. After the car is placed in the customers' hands, however, and paid for, all subsequent business with regard to that car is handled by the Service department. The Service department thus covers a broad field.

As a matter of convenience Nordyke & Marmon Company Service department is divided into four groups, known respectively as the Service Technical division, the Service Claim division, the Service Order division and the Service Repair division. The Service Technical division takes care of all technical correspondence, complaints and suggestions, preparation of instruction book, etc. The Service Claim division handles the return of replaced parts for credit under the warranty. The Service Order division takes care of all orders for repair parts, preparation of parts list and keeping all owners' records. The Service Repair division supervises the work of the factory car repair shop, both for the repair of complete cars or assembled units.

The outline of an efficient dealer's service organization is an enticing subject, but one which I must not take time to discuss here at length, further than to say that in general I believe the factory divisions of the department can be followed in a general way, because this phase of a dealer's establishment has the same primary functions as the factory. I might simply mention, however, the organization which has been found logical by our larger branches, in which a business manager takes charge of all of the business of the branch except the sales, thus leaving the general

manager free to devote the majority of his time to sales alone. The business manager's work is divided among two principal departments, the Accounting and the Service.

When it comes to discussing the users' idea of service, we come close to the root of the subject. Through common usage the word "Service" too often is confused with "Free Service." A man will talk glibly about having "Service" work done on his car, but is brought up with a start when you ask him if he is after "free repairs." There is nothing "free" connected with service of other kinds. Telephone service, a doctor's service—is service, but it is *paid for*.

It is certain that at the present time automobile owners in general are inclined to expect a great deal more from those from whom they buy than is either logical, rational, or right. This inclination constitutes a problem of great seriousness to the industry, and one which must be solved before we can settle down to the solid basis on which other industries rest.

I do not know how this condition came about, but I can see some of the forces which have been at work. I see some responsibility in some factories' past policies. Through their advertising and sales propaganda they have shown a tendency to encourage a buyer to believe he has a right to expect more from the car than is physically possible. It must be remembered, however, that the intense competition which has engendered this attitude has done more to hasten the perfection of automobile design and construction than any other force; and the splendid progress which American automobile manufacturers have made during the short life of this industry has been made possible only by thus educating the public to an appreciation of the fine points of automobile performance.

I see some responsibility among dealers. In the early days the value of a satisfied owner had an exaggerated importance and had to be purchased at almost any price. Far be it from me to underestimate the important business asset of satisfied ownership. To satisfy Marmon owners is my particular work. It is not the reasonable owner who makes this difficult, but I am here to state there are times when satisfaction can be bought at too dear a price. In a large sense, satisfaction cannot be bought or sold, because it is a mental atti-

tude; not a tangible asset. A man who will knowingly work on a dealer or factory to purchase satisfaction at the greatest possible price, will not consider himself satisfied even after the desired price has been paid. It is impossible to guarantee satisfaction. Our guarantee should end at a stopping point which best judgment indicates to be correct, rather than taking the judgment of a customer whose knowledge is necessarily limited and usually biased.

Notwithstanding this we would not charge the public in general with the service problem. It is our problem, not his. The big forces which have generated the problem are not the manufacturers', not the dealers', they are not man-made forces but forces inherent in the very nature of the business. The automobile is the most complex mechanism operated by amateurs. The operating conditions are almost always unfavorable. There is a vast amount of power available, either for useful or for destructive purposes. The physical exhilaration of driving is a constant temptation to abuse. The requisite care and attention are rarely given. All operating conditions call for the limitations of strength in the interest of light weight, an essential to automobiles, as to no other mechanism.

A sewing machine or a player piano, a threshing machine or a printing press, are operated by more or less inexperienced people, but they are operated under set conditions, free from the probability of abuse and from the many factors of automobile operation, mentioned above, all tending to create a service problem. Until the industry as a whole is awaked to this fact, until the service problem is met, face to face, by all interested, until it is eliminated as a factor of competition between manufacturers and between dealers—then only can we expect to do business on a logical and reasonable truly business-like basis for service.

In my mind the answer to the service problem is standardization. Ruinous competition, damaging ultimately to the consumer as well as to the seller, has been successfully met and conquered in many industries in the past. Through the adoption of standard and fair freight and passenger rates, the railroads have successfully maintained their integrity, without injury to the public. Through standardizing coal rates, local dealers accomplish the same end. The only answer to ruinous automo-

bile service competition is standardized service.

I am happy to say that some progress has already been made and is being made in this direction. Several years ago the National Automobile Chamber of Commerce adopted a standard warranty, which has gradually been adopted by various automobile companies, until now it is in force among practically all of them. We presume that at the time this warranty was adopted it was considered that it would serve as an absolute basis for the service policy in this industry as in others. However, while the terms of the guarantee have been considered correct as a limitation of service in cases of abuse, it has been conceived that a more complete definition of policy is necessary if true standardization is to be achieved.

In conclusion I want to say that I think this policy should become standard among not only all manufacturers, but among dealers as well, and if it is within my province to so do I urge that this association consider its adoption.

### Rousing Meeting of Garagemen at Milwaukee.

The Wisconsin Garage Owners' Association held a rousing meeting on the night of November 28 at Swendsen's Garage, Eleventh and National avenues, Milwaukee, the largest in its history, to consider legislation for the protection of the garage interests at Madison this winter, and discuss other matters of interest to the garage business of Milwaukee and the state.

The four city branches of the association turned out in large numbers and the national body, the American Association of Garage Owners, was represented in the person of its national secretary, who brought to the gathering the pleasing news from Chicago of the election of E. A. De Laruelle, president of the Wisconsin association, as national president.

Mr. De Laruelle presided and S. H. Eigel was at the secretary's desk. Addresses were made by E. A. Swendsen of Swendsen's Garage, W. H. Penner of the Riverside Garage, J. H. Thor of the North Side Auto Co., Stanley Jack of Jack's Garage, Mr. Koenig of the Auto Parts Machinery Co., who reported on the progress of the work in the several divisions of the city. Attorney Nathan M. Stein, who is the association's regular attorney, spoke on the present lien laws of Wisconsin and what is needed to bring them up to the highest protective standards.

President De Laruelle in his general review of the situation spoke of the standardization of prices, propaganda to prevent profitless and over charges, "safety first" to aid in every manner possible the protection of life and limb, and co-operation among garagemen in obtaining cer-

tain classes of supplies on a basis that saves both the garageman and car owners money.

Secretary C. M. Carr of the A. A. G. O. reported on the progress of the national work and complimented Milwaukee on the successful efforts it is putting forth. He spoke in favor of the Ferris general leasing bill, the passage of which will throw open to general leasing five million acres of government oil lands as part of a plan to bring down the price of gasoline. The monopoly interests are said to favor the Phelan bill which has been substituted in the Senate for the Ferris or House bill passed by the House at the long session of Congress by a large majority vote. The national association has gained 11,000 members during the past year, and Mr. Carr predicted that President De Laruelle's administration will make a new and still better record.

It is stated that a large majority of the garages of Milwaukee are members of the Wisconsin association and a number of applications for membership were favorably acted upon. The meeting voted also to recommend an increase in the entrance fee, the increase to take effect soon. Secretary Stanley Eigel, 11 First avenue, may be communicated with by non-members who wish to know more about the association or become members.

It was the sense of the meeting that Milwaukee be strongly represented at the national convention of the A. A. G. O., to be held in Chicago, February 1 and 2, during the big automobile show.

Luncheon was served after the business session, followed by vaudeville stunts, stories by Ike Schatz and others, the gathering breaking up after midnight.

### Wausau Dealers Organize.

The Wausau (Wis.) Automobile Dealers' Association was formally organized at a meeting held at the Wausau Club Saturday, Nov. 18, by the election of the following officers:

President, K. J. Reams.

Vice-president, W. C. Nieman.

Secretary and treasurer, T. O. Kellogg.

Directors—The officers and Fred Schurbring, John Koons, Frank E. Morgan and T. L. Jacob.

It was decided to limit the membership in the association to dealers in automobiles and accessories and it is expected that every dealer in the city, all but three of whom were present, will join.

The board of directors was authorized to draw up by-laws, and to investigate all matters pertaining to the automobile show which is to be held at the Rothschild pavilion next February.

Much interest was taken in forming the organization and in the coming auto show, a free discussion being participated in by all present.

### The Akron Dealers' Association and Show.

Akron, the rubber center of the world, is to have the first show for passenger cars exclusively in its history this year.

The success of the enterprise is foreshadowed by the fact that it is backed by a strong dealers' association.

The organization comprises about thirty automobile dealers and is known as the Akron Automobile Dealers Show Association. The following officers were elected: President, A. O. Wood; vice-president, E. G. Grady; secretary, W. J. Boardman; treasurer, J. H. Wiener; and executive board, Andrew Auble, Jr., C. C. Lowe and F. C. Sibbald. Grover Reese, secretary of the Akron Automobile Club, was made general manager of the 1916 show.

Nearly forty lines of cars, the value of which will be close to \$200,000, will be exhibited at the East Market Street Gardens, Dec. 9 to 16.

All the space in the show was sold in thirty-five minutes and General Manager Reese reports that twice the amount of space was needed. Owing to lack of room each dealer's request for space was limited. Because of this lack of room all commercial vehicles and accessories were excluded.

Akron now claims more cars per capita than any city of its size in the country. Car sales are increasing so rapidly that according to President Wood, registrations in the city are expected to double easily within the next two years.

"The Show Association, while formed primarily to manage the automobile exhibition this year, will nevertheless devote its efforts to other matters of interest to the motor car trade," says Mr. Wood in a communication to National Headquarters.

"Much legislation vital to garage owners will come up at the session of the legislature this winter, and our association expects to send delegates to Columbus on various matters.

"The splendid co-operation which we have finally been able to get from practically all the dealers in the city give us the strength we have needed for so many years.

"A dealers' picnic which was held last summer proved to be the first step in getting the boys together. For a day all the dealers in this section dropped competition and got acquainted.

"The Akron Automobile Show then came as the next step in forming an organization that bids fair to be a tremendous force for better conditions in the automobile business.

A. A. G. O. men throughout the Buckeye State are urged to co-operate with the Akron and Ohio State Association brethren in putting sound and efficient protection legislation on the statute books at Columbus this winter.

# Annual Meeting A. A. G. O.

**E. A. De Laruelle Succeeds John C. Phelan as President—Latter's Godspeed to the Association**

As provided for in the constitution of our organization and the statutes of Illinois, under which it is organized, the American Association of Garage Owners, a corporation not for profit, held its annual meeting in the offices of the association at 53 West Jackson boulevard, Chicago, Tuesday, November 28, 1916, at 9:30 o'clock, a quorum of the executive or first members being present.

In the absence of the president, C. C. Bumbaugh was elected chairman and C. M. Carr acted as secretary.

The business transacted was as follows:

Reports of officers were submitted and the work of year approved.

The secretary-treasurer's report showed receipts for the year, \$24,121.40; disbursements, \$26,844.89; loans, \$2,818.35; cash on hand, \$94.86; accounts receivable, \$838.15; accounts payable, \$285.54. The loans represent cash advanced by the secretary-treasurer and his publishing associates in financing the organization work.

Reports of heads of departments were made, developing interesting facts which show progress in the work of building a permanent and effective organization. The progress made in developing a strong and efficient official journal and mouthpiece for the association was most gratifying, and Messrs. Carr, Hastie, Kelsie, McMeal and Fargo were complimented on the results of their efforts. Mr. Marcher's work at the head of the organization department was also commended.

The Ferris general leasing bill was endorsed as part of a plan to increase the nation's supply of gasoline. The bill has passed the House at Washington and is now before the Senate. Members throughout the country were urged to secure the passage of state lien laws, following the New Jersey model, and the support of the national organization and journal was pledged to these efforts.

President Phelan sent a message to the field which was read, approved and ordered published. It appears on another page in this issue.

It was voted unanimously, on recommendation of the secretary-treasurer and director of organization, that the annual dues be increased to \$4, beginning January 1, 1917. (Dues and the journal, \$5 a year.)

In view of the fact that the association work had been a financial drain on the journal backers, it was agreed that under the increased dues it would probably be able to take care of itself in the future. The question of passing title of the journal to the corporation which is operating the journal under contract with the association, and thereby clearing up this in-

debtedness was considered and a committee appointed to go into the matter further, with power to act.

The salary of the secretary-treasurer for the ensuing year was fixed at \$2,600 which, in connection with his compensation from the journal corporation as editor, provides for the administrative head of our organization sufficiently to keep him on the job at "high speed."

The contract entered into by the association with the Insurance Exchange whereby the financing of this needful project was shifted from the association to Mr. White and his associates under adequate guarantees and safeguards was approved.

The election of officers then took place, as follows:

**President, E. A. De Laruelle, of Milwaukee, Wis.**

**First vice-president, P. M. Kimball, of Parsons, Kan.**

**Second vice-president, M. J. LaPorte, Holyoke, Mass.**

**Third vice-president, E. A. Querinjean, of Cellna, O.**

**Fourth vice-president, J. H. Earl, Anderson, S. C.**

**Secretary-treasurer, C. M. Carr holds over under the constitution.**

Supplemental reports of officers and department heads will be made at the big annual convention to be held February 1 and 2 next in Chicago during the automobile show.

## President Phelan's Godspeed.

*Fellow Garagemen and Dealers:*

**I**T IS with a distinct feeling of regret, yet of satisfaction, that I have retired as president of your association, placing the presidential reins in the hands of Bro. De Laruelle of Milwaukee, in whose loyalty, earnestness and ability to serve you I have the highest confidence.

In taking leave of official position, the honors of which I have been deeply sensible, I am reminded that we have passed through a year of phenomenal achievements. I am proud of the part I had in them and desire to congratulate you, my fellow members, on the benefits that are accruing from them and of the further benefits that are to come to you because of them.

One year ago the A. A. G. O. as a national institution was in its infancy. Its membership was small but active, zealous, courageous and vigilant. Now, gathered under the pure and lofty banner of our organization are numbered somewhere like 12,000 garagemen, dealers and repair shop owners, to which has been added during the past three months a fine and growing constituency of automobile employees.

One year ago our hustling secretary-treasurer, assisted by two office girls, occupied a small one-room office and did all the administrative work connected with operating the organization and issuing its official publication; today the work is departmentized and Mr. Carr has capable and responsible heads to the following departments: Organization, subscription, advertising, collection, legal, insurance, mechanical engineering, and employment-registration, and the national headquarters occupies large space in one of Chicago's most noteworthy and centrally located office buildings, with eighteen people taking part in the administrative activities and twenty-one people employed in field work, the latter covering nearly every section of the country.

It is hardly necessary for me to enumerate the list of A. A. G. O. activities or to enlarge upon their value to our craft. You as readers of the official journal should be thoroughly informed. I desire, however, knowing as I do how busy we all are, to urge you not to delay taking advantage of every benefit your officers have labored so incessantly and doggedly to provide. They are for you and they mean money saved, money made, and helps that will compensate you many times for all efforts and cost you may expend in promoting the welfare of the association.

In this connection I desire to point to the Inter-Insurance Exchange of the A. A. G. O. as the signal achievement and triumph of organization. I have investigated many private and association insurance departments, as a layman, of course, and I find none that has accomplished the feat of providing through one organization and two exchanges with safeguards that are beyond question both fire and casualty indemnity and protection for its members. I can assure the field that, not only eminent insurance experts, but the most eminent legal counsel, has been requisitioned in the task of doing for our members and craft a service so broad and comprehensive as to make it the wonder and admiration of the organization world.

In laying down the sceptre of administrative power possessed by a president, I am reminded to refer to plans and policies that have been formulated to strengthen the hands of the workers at headquarters and carry the message of good words and good deeds to every city, town and cross-roads in the country. The state agency plan is one of these, and it is calculated to bring into the service of the A. A. G. O. a higher type of field man, thus giving greater stability and permanency to our work in the several commonwealths of our great Union of commonwealths.

I would be remiss in my duty to you and our organization if I failed at this time to commend the work of the AMERICAN GARAGE AND AUTO DEALER, our official journal, for it is the voice of organization and organization power wielded in



behalf of the garagemen and dealers and their special interests.

As a parting admonition, let me say: Brothers, stand loyally by your officers, render them every assistance. Go after lien law and other legislation in each and every state, and call upon headquarters and the journal for their powerful assistance and support. Organize everywhere; build up strong local and state associations. Get together socially at luncheons, dinners, dances and the like; when you know each other better you will help each other more.

In leaving the presidency, I am also leaving the field of garagedom and automobile-retail-and-servicedom, my other and larger interests having made this imperative.

I leave with regret at parting company with a bunch of good fellows who are "comers" and leave behind with them a good-bye and Godspeed, the regret being tempered with and compensated for, at least in part, by the allurements and prospects which beckon to me from the field which I am now entering. Again, good-bye, God be with you.

Fraternally,

JOHN C. PHEAN.

### Portland, Ore., Garagemen Elect Officers.

The Portland Garagemen's Association at its monthly meeting early in November elected new officers as follows: R. D. O'Brien, president; R. E. Boggeas, first vice president; R. L. Short, second vice president; B. C. Undine, secretary, and Fred Dundee, treasurer.

The association has done much in the past year for betterment of the affiliated members and also for the car owner. The latter is assured of better attention to his car and of value received in repair work, as the association has done much to regulate prices and eliminate the man who discredits the business by practicing extortion and in other ways mistreats the public.

### Garage and Auto Dealer Luncheons.

The garagemen and auto dealers of Rockford, Ill., are holding weekly noonday luncheons with an attendance of over twenty. In this way each one finds that his competitor is not a pirate and many matters are talked over which prove beneficial to the trade as well as their patrons. The affair is largely social but has a strong background of practical business and service. Jud S. Joslyn is a leader in the movement.

At Houston, Tex., the trade luncheon idea is not a new one. August C. Bering initiated the movement and already good results have been obtained. The trade has gotten together on a basis of friendship and co-operation to discuss trade problems, and among the reforms already achieved are the evening closing of shops, abolition of ruinous free service and less Sunday

work, and plans for other constructive work are under way.

At Lafayette, Ind., the luncheon idea has a foothold, and in Chicago the plan is about to be inaugurated by National Secretary Carr and local President Halbert.

### Live Association—Will Give Show.

Field Representative A. P. Meng addressed the York County Automobile Dealers' Association at York, Pa., on November 27, outlining the work of the national organization and showing the local dealers how A. A. G. O. support and influence would make their work more effective. The meeting was enthusiastic and Mr. Meng's spirited address was received with satisfaction. The York contingent evidences great interest in the lien law legislation inaugurated in Pennsylvania by the national body, and with the help of such local associations as the York, there is no

### A. A. G. O. Gets Member His Money.

"I received \$14.00 check from the S— Co. Please accept my thanks for same. I have been many months trying to get this deposit money back, but was continually refused. The A. A. G. O. work in getting this money for me is greatly appreciated and will be glad to be of service to you in any way."—H. H. Nelson, garageman, Roselawn, Ind.

reason why an adequate lien law cannot be secured from the legislature at Harrisburg this winter.

The York County Association will give an automobile show in York, December 30 to January 6, in the Biederwolf Tabernacle. The show is expected to make a fine record in point of number of exhibits and attendance of the motoring public.

### Free Auto Service to Be Eliminated in Houston District.

The accessory, tire and repair shop proprietors of Houston, Texas, have for the past several years allowed the custom of free auto service to become established. A stranded autoist may telephone to a Houston repair shop man from a distance of ten or twelve miles that he has trouble, lack of gasoline, or any other of the hundred things that may happen, and secure assistance with no charge being made for the trip to the scene of the accident. At a recent meeting of about twenty automobile accessory, tire and repair shop men of Houston, the abuses of this free service was thoroughly discussed. One dealer reported that an analysis showed his company that the actual cost of answering the average call varied from forty-eight to

fifty-five cents. It developed that some local dealers have sent their cars a distance of twenty miles in one direction to supply a stranded autoist with five gallons of gasoline, cost of the gasoline being but ninety-five cents.

Another dealer in referring to the free service custom that has grown up, declared that on more than one occasion his service car had been called to a point miles distant to make repairs on a mail order tire; and on other occasions to make repairs on casings and tubes purchased from a dealer other than himself.

It was the general sense of the meeting that the dealers will not experience a great deal of trouble remedying the present conditions.

"It is just a question of training the motorist along new lines," said one. "In the past they have relied upon the dealer because the dealer has been ready to respond. When free service has been eliminated or cut down to a minimum no driver will start out without an extra casing or tubing."

It was said that free service was unknown in most of the larger cities of the country.

While no vote was taken pledging the discontinuance of free service, it was the sense of the body that a gradual revision of rules in regard to the same with its final elimination should be undertaken at once.

Secretary G. W. Tremain, of the Northern Iowa Auto Show Association, advises A. A. G. O. headquarters that their sixth annual show will take place at Ft. Dodge, March 6th to 10th, and that it will surpass in number of exhibits and other features any of their previous shows. Mr. Tremain also states that Iowa State Dealers Association will hold a meeting in Ft. Dodge, Jan. 9th to 10th. The Ft. Dodge Auto Dealers Association will act as hosts on both occasions and promise all visiting garagemen and auto dealers a profitable and enjoyable time.

Earl McCullough, Beaver, Pa., states that some one handed him a copy of the American Garage and Auto Dealer and that he "found it a very good paper and one that hits every phase of the auto business in the bull's eye." Of course he became a subscriber as well as a member of the A. A. G. O. at once and is now arranging to obtain the benefits of fire and casualty protection through the A. A. G. O. Inter-Insurance Exchange.

The Central Tire Company, Marshalltown, Ia., writes: "We wish to thank you for the interest you have taken in helping us to a better business. We garage men and vulcanizers have had need of a medium like the A. A. G. O. and its official journal through which we are able to get quick service along the lines in which you endeavor to help us."

# Putting the Motor on the Counter

## Enormous Increase in Automobile Production Calls for New Type of Sales Force—How and Why Changes Are Made

By JAMES H. COLLINS  
in McClure's Magazine

The early years of the industry saw a limited supply of cars at high prices, with a large purchasing demand from the public. There were not enough cars to go round. People came to any dealer for any car that would run, and automobiles were *bought*.

Then the cars were improved and standardized. Prices came down under the magic wand of quantity production. By and by there were enough autos for everybody, and at that point people no longer bought.

So the cars had to be *sold*.

Today there are still more cars, with prospect of heavier production in the years to come. The big manufacturers are working on the quantity basis, with an output that increases each year. Production cost and factory profit turn absolutely upon the ability to dispose of each year's output. The ratio of profit is now so small that, if a manufacturer made fifteen cars and sold only fourteen of them, the cost of the single car left on his hands would eat up his profit on the other fourteen—practically he would have made and given them to the public. So it no longer suffices even to sell cars. They must be put on the counter attractively and *merchandised* with all the art and skill employed in selling other goods.

The important end of the automobile business today is the dealer's end. It is undergoing changes faster than the manufacturing end, carries a wider margin of profit, and offers more opportunities to men who want to enter this big industry.

There is an entirely new type of automobile dealer emerging, and he is falling into one of three groups:

First—He is a dealer of the repair shop kind, who sees the light and hits the sawdust trail into the new era of automobile merchandizing.

Second—He is a young fellow who has watched the auto business from outside, and decided he would like to get into it, and does get into it by one of several openings.

Third—He is an automobile salesman who has shown such capacity on the road that some manufacturer gives him important territory and helps him financially in making a start as a dealer.

Most of the chances for young men are in the second group, and also most of the hope of the automobile industry in getting merchants to handle its products.

Let us picture a typical candidate for that group, and follow him as he develops into an automobile dealer.

He will be a young man of twenty to thirty, with ambition, character, attractive personality and some business experience. College and a few years in Dad's bank, with Dad's financial backing, makes a good start. High school and a few years in business is excellent, especially if there has been selling experience of any sort. It is highly important that the candidate have initiative, enthusiasm, the knack of dealing with people, and determination to get somewhere. Jobholders need not apply.

This candidate is apt to find his field in a small town, rather than a city. It may even be a "one-gallus" town of less than a thousand population. A few years ago the demand for automobiles was centered in cities. But nowadays the heaviest percentage of sales is being made to farmers. Places that five years ago were just lumped into the territory of the big city dealer, and neglected by him, are now profitable sales points in themselves. The greatest need of the industry is for the merchant type of dealer in those places, because the cities are already well covered. The dominant idea today is intensive working of small territory.

In many cases the candidate who wakes up to the possibilities of automobile selling will find that the popular cars are all represented in his town. Some of the dealers may be indifferent salesmen, carrying cars as a side line to some other business. Perhaps the car he thinks he would like to handle is in the hands of an old foggy merchant who is not doing the manufacturer justice. He hurries to the manufacturer, and tells him so, and expects that it will be easy to get that agency for himself.

But usually he meets with disappointment. The manufacturer is slow to change agents and break old connections. Two or three experiences of that kind may make it look as though there were no chance for a live newcomer.

The chances are there, however. It is necessary to prove that he is a better dealer than the old one, that's all. Let him go to work under the dealer and prove that he can sell cars, and the manufacturer will be keen in helping him make satisfactory arrangements. Sometimes he can get other territory, or again, become a partner with the old dealer, or buy him out. There are many ways of adjusting

things, and the manufacturer will find a satisfactory arrangement.

Let an ambitious man get the sales representation for a standard car, and make a start by finding customers, and the bankers in almost any community will now finance his operations up to eighty per cent of the net cost. It is no longer a question of using Dad's money. The basis of credit is the car itself, plus the ability of the dealer to sell it. In special cases, where the car is of a make that enjoys prestige in the neighborhood, and the dealer is buying from the manufacturer during the fall and winter, to deliver to assured customers in the spring, banks have gone so far as to lend the full net cost, plus freight, and also pay storage.

"Ninety-five per cent of the problem of selling automobiles is *men*," said one manufacturer. "A boneheaded jobholder could neither sell a good car nor keep the owners happy afterwards if he did sell. The man of ability with a good car sells largely upon his character, and character is the basis of credit. So the possession of this ability means also the possession of credit."

When it comes to profits, the dealer has by far the most comfortable margin in which to turn around. His discount is usually about twenty-five per cent off list price. If a car is sold to the owner for one thousand dollars, f. o. b. factory, the dealer gets it for seven hundred and fifty dollars, and pays the freight, which he charges to his customer. The manufacturer's profit on that car will probably be less than fifty dollars, or five per cent of the list price. These profits approximate those on the average run of general merchandise.

With his retail profit, the dealer is nowadays expected to be a real retail merchant, and also to take care of his customers after they have purchased.

In other days, a profit of two hundred and fifty dollars was pocketed on a thousand-dollar car sold by somebody who came after it and paid cash to take it away. But today, the dealer must do many things with his profit.

One of the first is to set aside five per cent as a fund with which to give his customers service. Much has been said about car performance after purchase, and now every wide-awake manufacturer places great emphasis on dealer performance. The dealer must be ready to replace de-

fective parts, correct shortcomings, keep the car running and the customer happy, and do it all instantly, without question. In many cases the manufacturer finally stands the expense of replacement and repair. But this involves a period of investigation and adjustment. Once upon a time the dealer simply shrugged his shoulders and threw the customer back onto the manufacturer for service. Now he is like any other merchant, taking goods back across the counter, adjusting trouble on sight, and making everything satisfactory out of his own pocket, if necessary.

He must also maintain a better selling system. It costs money to locate and keep track of prospective automobile purchasers, for they may take a year or two to finance the investment in a car, and at any time are likely to switch from one make to another. But the live dealer knows that it pays to follow all the waiting and shifting of preferences. He knows who will buy a car for the first time next spring. He knows who should be open to a proposition to trade in an old car for a new one this spring. He studies his community, and locates future customers before they themselves are quite ready to think of owning an automobile.

He is apt to be pretty keen on accounting. A large percentage of men who fail in business can blame lack of careful accounting. The auto dealer of the past rather ran over the percentage in neglect of this fundamental. The new type of dealer builds his business on good book-keeping.

He has a real organization around him, even if it is small. If you want a spare part worth forty cents, or have brought in a tire for adjustment, you can find him at his desk or in the salesroom, and he presses a button for an assistant to take care of you instead of running around doing forty-cent chores himself.

If he is in a small town, he makes a profitable business out of the countless accessories made for motoring folk. In the cities, these accessories tend to become a separate business, because men who specialize in them carry better stocks, and give better service. He may not be able to show as wide an assortment, but what he has will be well-selected, and shown, and the stock systematically maintained.

In other words, he is on the job, a wide-awake distributor for the most modern business in the country.

### Garage Prospects Growing.

There are 514,210 more cars in use today than there were on January 1st, 1916, the largest increase being credited to the following states in the order named: New York, Pennsylvania, Minnesota, Iowa, Ohio, California, Nebraska, Illinois, Oklahoma, Indiana, Wisconsin, Michigan, Massachusetts, Texas, Kansas, Florida, Colorado, these increases ranging all the way from 11,000 to 46,000.

# Dealer's Silent Salesman

## Window Display Is an Asset if Properly Used — A Liability Unless It Is Made Attractive — Some Ideas of Interest

By A. J. LYNCH  
of B. F. Goodrich Company

The first principle in the window display art is to make the displays fit the seasons. The holidays have the happy faculty of being the only medium that can successfully make the average business man forget the daily grind. The thought of showing the children some clever fireworks on the "Fourth"—the family gathering on Thanksgiving—the spirit that is ever present at Christmas time—all tend to place him in a receptive frame of mind, and any display that has something in common with his mood will light the spark that propels him to the front row of your window display audience. Then, if your "property stuff" has been cleverly but unostentatiously introduced into the general scene, you are bound to cash in on the display, for, even though the buyer needs nothing at that time, he is sure to remember that you are a progressive dealer.

In between the holiday seasons special windows can be worked up, such as one that would have a bearing on local celebrations, or a novelty display that shows originality, and it will not be long until one finds they have achieved a reputation for window display that will not only give them a great deal of publicity, but will also be a big factor in placing some new figures on the profit side of the ledger.

There can be no excuse for not knowing the proper color schemes, or not having the material, as the B. F. Goodrich Company makes a practice of supplying all dealers with seasonable and special displays upon request, and there are a number of other companies which do likewise. In sending a request in for a display, a dealer should always give the length and depth of his window.

The above is also a telling demonstration of the pulling power behind a window display when a little attention and time are devoted to the same. So many dealers are prone to put in their windows what might be termed a "conglomeration display"—throwing in the first thing that comes to hand, as it were—setting the smallest articles as far to the front of the window as possible, and then putting in an article which is next in size, and so on, until he has a faithful imitation of our aged friends—the pyramids. And the baby is using that design every day with his blocks—naturally the constant repetition fails to interest his Daddy as he passes the window of our "Stone Age" dealer.

However, if the dealers could bring themselves to realize that their window space is a liability when they neglect it, and a profitable asset when they take advantage of its possibilities, there would be more of those "punch behind them" displays that fascinate and corral Mr. Buyer.

In conclusion will state that we feel called upon to commend AMERICAN GARAGE AND AUTO DEALER for the efforts it is making in arousing the dealers' interest in one of their best assistants—the "silent salesman"—better known as the window display.

### Price Protection in the Tire Field.

The Brunswick-Balke Collender Co., Chicago, are new in the tire field and propose to start with a clear and unequivocal record on the important subject of price protection.

"We intend to protect our dealers in the matter of price right up to the handle," said Sales Manager Duffield to the editor of the AMERICAN GARAGE AND AUTO DEALER. "There are other concerns who are trying to do this but we are going to do it. Our marketing system is such that we will have direct control over retail handlers of our goods, as they are to be our direct agents, and should they fail to maintain prices they would not be able to buy our product. We would not sell them, and not distributing our tires through the jobbing trade, the price demoralizers would not be able to buy them elsewhere.

"Our company has adopted this policy because we want the users of our tires to receive uniform treatment from our agents, and we furthermore want our agents to make a legitimate profit on their tire turn-over. Our discounts are liberal and designed to benefit dealers and make them loyal to us and our product."

As stated by Mr. Duffield, other firms are attempting to control prices, and it goes without saying that they are succeeding up to a certain point. "Where there is a will there is a way," and all manufacturers who are seriously concerned with reference to price maintenance will ultimately succeed. The general sentiment in favor of price protection among the well-known makers of tires is most encouraging, and the clear-cut policy adopted by the Brunswick-Balke Collender Co. upon entering this field is one of the most hopeful signs of the time.

# National Highways' Facts

## Good Roads Add Materially to Value of Adjacent Land—How Original Cost and Upkeep Could Be Paid from This Increase

By CHARLES HENRY DAVIS, C. E.  
President National Highways Association

From everywhere there comes a long, loud cry for roads, more roads, better roads, and, heeding the cry, we are trying to get them.

This is how we are doing it: Everyone is building a road, the state, the county, the town. What the other states, counties and towns are doing does not interest us much. It does sometimes, in the Old Trails Road and the Lincoln Highway, for example, but generally we wish to show our independence and assert our right to what we call freedom. This we do by building our roads how we please and where we please, which may not be according to the best methods, or following the best general scheme of highways.

Along such lines as these we spent last year \$249,955,967 or more for road improvement throughout the country. This means that the people of the United States in their zeal for good roads and the results that good roads bring have paid in a single year more than two-thirds the total of money expended so far on the construction of the Panama Canal. Does the nation, as such, see material results from this vast expenditure? By these roads we are trying to build another sort of communication that is more vital to the future development of the country than any water route, because good roads everywhere have a vital importance for every citizen. With a whole nation so anxious for roads, the national roads should be properly built, built under one administration, and built where they will do the most good. In other words, good roads, roads that run for thousands of miles through state after state, are not the responsibility of the states, but of the nation.

Suppose the Federal Government did decide to build a system of national roads joining the West with the East, the North and the South, connecting every part of the country, as is the case with the national highways of Europe? History shows us this has been the case with nearly every first-class power. Would such a system of roads pay for the building, or even for their upkeep? A short calculation shows that by a fair system of taxation they would not only do this, but would also be a very considerable source of national income. Such a tax system would be something like the much disputed Singletax where land alone is taxed, regardless of buildings or improvements.

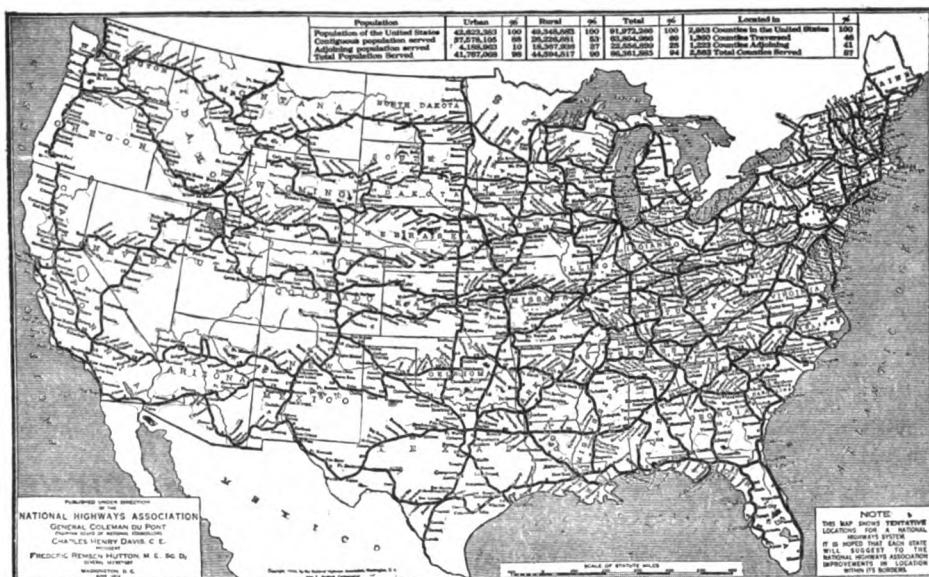
Suppose the government built one hundred thousand miles of properly planned roads, and at the same time purchased, say, three hundred feet of land on either side? With good roads, ready for use all the year around, this land would be bound to increase in value and would be increasingly in demand in town and country. If the government leased this land on long rental, with protective renewal clauses, the cost of the roads and the land purchase would soon be paid. On the basis of one hundred thousand miles of road and bordering land, costing, say, twenty thousand dollars a mile, or a total of two billion dollars, a rental rate of \$6.66 per acre would pay the

tion out of profitable business done for the people. Why not ours, and thus reduce our taxes?

It seems a sensible way of solving the road problem, of solving it well and quickly. Otherwise, a few more years will see the expenditure of this same amount on road improvements, with the usual results, and one of them will be the absence of good roads everywhere.

### Additional Highway Facts from Government Sources.

The total length of public roads in the United States, outside the limits of incorporated towns and cities, was about 2,452,-



interest on the cost of construction. But much would rent at vastly higher rates, enough to maintain the roads and reimburse the nation for the cost. In fact, and within a reasonable time, these roads should give the nation an income equal to its total annual expenditures.

Considering that one hundred thousand miles of national highways would run through towns and cities where real estate is at a premium, our figures are well within the probable results. In addition, improvements would be stimulated everywhere. There would be no tax on buildings bordering the road. Merely on the land. And as a result the nation would receive more than enough to run its business for the people and thus become self-supporting, as it should. Other nations raise up to forty per cent of their cost of opera-

000 miles on January 1, 1916. Of this, about 277,000 miles, or 11.3 per cent, were improved with some form of surfacing. The mileage of surfaced roads has been increasing at the rate of about 16,000 miles a year, and in 1915 approximately one-half of this increase was made under the supervision of State highway departments. In addition these departments supervised the maintenance of nearly 52,000 miles of main and trunk line roads.

The increase in expenditures for road and bridge work in the United States has been from approximately \$80,000,000 per year in 1904 to about \$282,000,000 in 1915, an increase of more than 250 per cent. The expenditure of State funds during this same period increased from about \$2,550,000 to more than \$53,000,000. In addition, more than \$27,000,000 of local funds was

spent under State supervision in 1915, bringing the total road and bridge expenditures managed by the States to \$80,514,699. This amount is greater than the total expenditures for roads and bridges from all sources in 1904, as shown by a recent report from the Office of Public Roads and Rural Engineering, U. S. Department of Agriculture.

The growth in importance of the State highway departments has been rapid. The first of these agencies was created in 1891 in New Jersey and now some form of highway department exists in every State except Indiana, South Carolina and Texas. Since their inception these departments had expended to January 1, 1916, an aggregate of \$265,350,825 in State funds for road and bridge construction, maintenance, and administration. They had constructed over 50,000 miles of roads in cooperation with the States. More than 40,000 miles of these roads were surfaced.

The falling off in the value of road work performed by statute and convict labor was from \$20,000,000 in 1904, when the total road expenditures were \$80,000,000, to about \$15,000,000 in 1915, when the total expenditures had grown to \$282,000,000. This was a reduction from twenty-five per cent of the total in the former year to less than five and one-half per cent of the total in 1915.

An increase in the use of better and more expensive types of roads also is shown by the recently compiled statistics. This development has been due, in large part, to the great increase in automobile traffic. It is estimated that there are now approximately two and one-half million automobiles in use on the roads of the country, or one car for every mile of road. This present motor traffic is in excess of traffic of all sorts twelve years ago.

The cash road and bridge expenditures of the United States averaged only \$28 per mile of rural roads in 1904. In 1915 this average had grown to \$109 per mile. New Jersey led all other States both in 1904 and in 1915, with \$221 and \$475 per mile respectively. Nevada made the least expenditure in both years—\$3.72 per mile in 1904 and \$17 per mile in 1915.

A clean garage invites trade. A dirty one drives it away. The large woman clientele that is growing so rapidly is an added reason why a garage should be kept tidy and inviting.

Get busy on lien law legislation. If you haven't a lien law, get one. If you have, improve it unless it is up to the New Jersey standard.

Price-cutting means service-cutting and service is what the car owner pays for—nothing else.

Arrange your business to attend the A. A. G. O. convention.

## A Message From Pennsylvania State Organizer Meng to the Craft.

I wish to say to you, my friends, that on the last of this month, Dec. 30, 1916, it will be one year to the day since I introduced myself to you as organizer of the National Organization, the A. A. G. O.

I want you to digest this talk and consider very seriously what I am trying to say to you, as I would not want the efforts that I have put forth in your state to go to waste, neither do I want our organization and what it stands for in Pennsylvania which, by the way, I want you to realize is your organization, to come to naught.

As I was saying, on Jan. 1, 1916, which was Happy New Year Day, I began the



work which up to the last of the year means almost complete organization in the old Keystone State, or practically ninety garagemen, repairmen, dealers and accessories out of every one hundred I meet.

When I start anything I like to finish it, and I like to do the right thing. I think I have done very well because I have had the enthusiastic support of the trade. Since the first of the year, 1916, I have been continually on the job and in my travels of 3,000 miles (all in Pennsylvania) I have traversed all the principal highways of the state, catching the small towns on the way to the large cities.

There will be by the last of the year something like 2,200 members in our organization in Pennsylvania, making it the best organized State in the Union.

This takes in Pennsylvania from the Southwestern part of the state to the Northwestern part, and from the Ohio state line through to the Delaware river, catching towns on the edge of New York State and here and there towns bordering on Maryland and West Virginia.

As indicated, one whole year was spent in organizing Pennsylvania. There are

quite a few towns that need to fall into line, and these will be gone after as time goes by.

To get to the point, however: On January 1, 1916, my request was and has continually been that you men have an opportunity to assist in getting better legislation in this state; that the A. A. G. O. was here to back you up and to battle for better conditions, and to assist in making your business in the end pay better.

You responded nobly; you realized that something should be done, and some of you expressed a desire to assist and a willingness to help.

Some of you had been stung so often on various things that you did not know what blew in when I told you our object, but you believed me and I appreciated it. I (as you know) never thanked you boys for the money you put into the organization, as that was being spent for you. I always thanked you for your support. Some of you said to me, "Why thank us? We want to thank you for coming here and acquainting us with what is happening, and we want to help. Tell the organization they can count on us," etc., etc.

This kind of talk always encouraged me, and it was for you men who reminded me to get so and so and to tell so and so (that they should get in the movement) that kept "yours truly" on the job looking out for the well-being of your fellow craftsman. Not only on the main streets of your towns and cities, but in the back alleys I worked. I invited the little fellows into the organization as well as the big ones.

I don't think I made a mistake, because, if there is anything in organization, and that is the main object of the A. A. G. O., we naturally must have all of you, big and little.

Now to get to the real subject again:

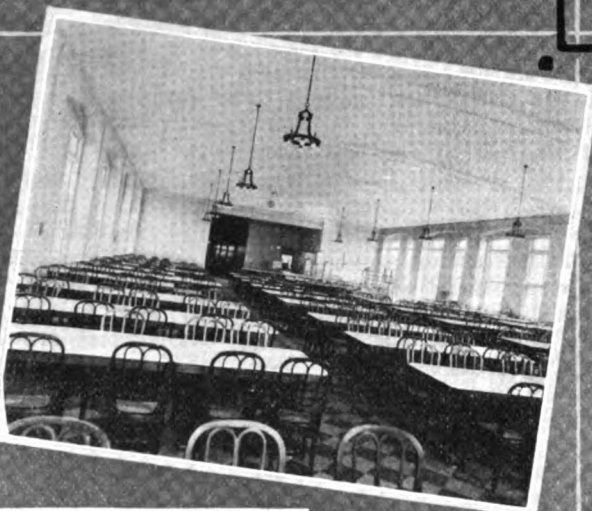
This winter you boys can get this much-talked-of legislation that I have been telling you was one of the objects of the A. A. G. O. and I want each one of you to do your little share.

Here is the dope: Sit down as soon as you finish reading this article and write your senator and representative that Pennsylvania needs a law that will protect you when you sell gasoline, accessories or supplies to a car owner, or store or repair his car, by giving you a lien on the car.

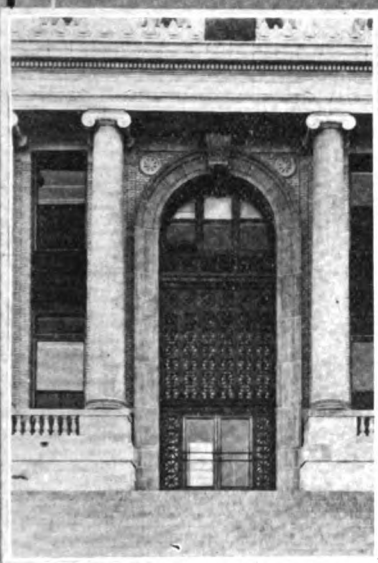
Tell your legislators that the auto craft is sadly in need of this law, that it will work no hardship upon anyone except the deadbeat, and since other states have this protection, we in this state would like to have something better than we have. Get his opinion on this, and tell him you will be guided on how the wind blows.

In doing this preliminary work, you will greatly assist the A. A. G. O. who will be on the job at Harrisburg when the time comes for action.





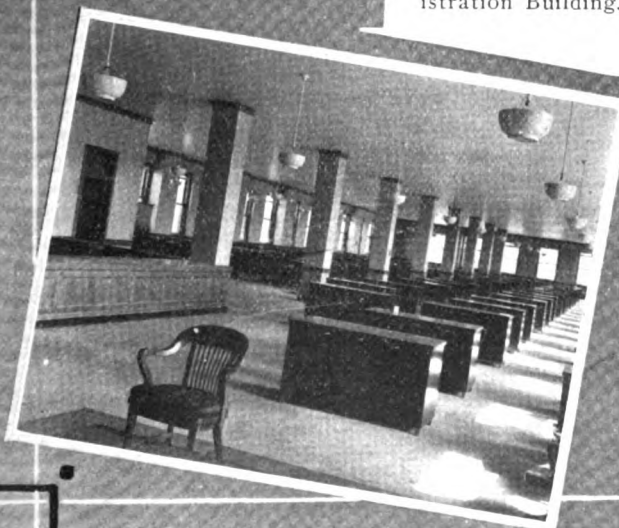
## Willys-Overland Administration Building



¶ In which is being held the biggest convention of dealers in American commercial history. Over 5,000 Overland dealers, going to Toledo in twenty special Pullman trains, are the guests of President John N. Willys, of the Willys-Overland Company.

¶ Nothing better illustrates the stability of an industry than the character of the buildings in which it is housed. Less than ten years ago there would have been no way to raise the money for such an architectural triumph as the new Administration Building. Today, the building is a necessity and is worth its cost viewed only as a high-grade advertisement.

¶ The Willys-Overland Company is being showered with congratulations on the commercial and financial standing typified in its new Administration Building.



### Indiana Sets the Pace.

Indiana good roads boosters have taken the first step towards getting a State Highway Department. A large meeting of representatives of about 30 state-wide organizations was held on November 2 at Indianapolis under the auspices and management of the Hoosier State Automobile Association, and as an outcome a committee was formed with authority to draft a bill for presentation at the next general assembly. This committee is known as the Indiana State Organizations Highway Committee and will follow the resolutions passed at the meeting for drafting of the bill. When the bill is completed, another meeting will be called for the purpose of giving all interested parties an opportunity to voice their sentiments.

If a State Highway Department is established in Indiana it will mean that the state will receive her share of the federal aid, from which she is now precluded. At present all states in the Union excepting Indiana, South Carolina and Texas have such departments.

Some of the resolutions passed by the first general meeting deal with the creation of a State Highway Department conducted on a basis of non-partisanship and efficiency, with details of the formation of a highway commission and engineering force.

### Collection Results.

"I am getting good results from your Collection Department. It is fine."—Dixon's Garage, Arthur, Ill.

### One Way to Help Car Shortage.

"The present critical situation in shortage of freight cars," says Alfred O. Dunk, President of the Detroit Motor Car Company, Detroit, "could be improved if the railroads would operate warehouses of their own, and when demurrage sets in on a car, remove its contents and place them in the railroad storehouse, even without waiting for the consent of the consignee.

"Consignee, anyway, would be glad to have this done, as the charges for warehousing the goods would be so much less than the demurrage. This system is worked with entire success at Boston, where the Boston & Albany Railroad operates the so-called Albany Terminal Stores. This is nothing more nor less than a railroad warehouse. When demurrage begins on a carload, the Boston & Albany immediately put the goods in their warehouse, and put the freight car into service again. This would seem to be a very practical plan, and one which, if adopted more widely, would relieve the present freight congestion to a considerable extent."

## LOOK OUT

### Beware.

A man signing the name of A. B. Frances is making the rounds of garage owners, dealers and others connected with the industry, taking subscriptions for Motor Life and promising a book entitled "Automobile Troubles and How to Remedy Them." He leaves a receipt with no address, simply Western Offices, Chicago, with Auto Troubles Co., printed on with a rubber stamp.

No such company can be found and Motor Life representatives say no one has authority to take subscriptions for that publication.

### Reward Offered.

If any of the following men approach members of this industry with a proposition involving the payment of money for membership in this Association, subscription to the official journal or for A. A. G. O. signs, pennants, lapel buttons, etc., from this date a reward of \$25.00 will be paid for their arrest after they have accepted money for any of the above purposes:

G. A. Bronson, alias Hopkins, Brown, Hawkins.

W. J. Le Noir, or Squire Wilson, supposed to be the same.

Glen A. Smeeman.

Bronson, Smeeman and possibly Le Noir are traveling by automobile, or were during the good weather. Smeeman's wife accompanies him on most of his trips.

These men have on different occasions made false statements regarding the association. In some instances have collected, fraudulently, more than the correct amount, have deliberately withheld the names of those who paid them money and have defrauded the Association.

If this notice reaches the attention of anyone who has been victimized by them, the officers of the Association most earnestly and urgently request that they will at once report the transaction to National headquarters.

**Paid Garage Bill with Worthless Check.**—The People's Garage, Marion, Ind., report that one Irwin Cox had work done at that garage on his car to the extent of \$15.00, paying same with a worthless check drawn on the Lake City Bank of Warsaw. The check came back with \$2.33 protest fee. The last heard of Cox was in Indianapolis, Ind.

**Crooked Subscription Agent.**—A subscription agent by the name of Frank Graham, claiming to represent the Motor Age and giving a premium book called "The Modern Motor Car," has been taking subscriptions and offering that journal and book for \$2.00. The People's Garage, Marion, Ind., is one of the victims. The

Class Publishing Co., publishers of the Motor Age, advise that Graham had no authority to represent them and that their publication with no premium always sells at \$3.00 per year. Graham has been arrested and is serving a 30-days' jail sentence in Detroit.

### A Subscription and Advertising Fakir.

—F. J. Wescott, garage owner at Stuttgart, Kans., reports the operations of H. H. Davis, claiming to represent a motor journal. He takes subscriptions and advertising from garagemen and others which proves to be without authority from the publishers of the journal. They advise those who pay that Davis had no authority to represent them and refuse to honor or make good on any transactions he puts through. Mr. Westcott regards him as a fraud and has nothing but a receipt to show for the money paid him.

**Dr. Scales Located.**—Dr. Scales and an Overland car wanted at Salina, Kan., were captured in the King Garage, Atchison, Kan., Nov. 16th. Scales had made way with the car, attempting to beat a \$700 mortgage. He was going south to seek a new location and the car was identified by its number. All such cases should continue to be reported to A. A. G. O. headquarters.

**Speers Not Connected With the Jefferson Electric Mfg. Co.**—A. R. Johnson of the Jefferson Electric Mfg. Co., Chicago, under date of November 17th, advise this office that the person styling himself "Speers, the Distributor," is in no way connected with that company and never has been, and warns the trade against the operations of this party, who has been selling the Jefferson Regulator at \$4.00 and \$5.00, when the regular price thereof is \$2.50, subject to regular dealer's discount. Mr. Johnson states that quite a number of garagemen and auto accessory dealers have been imposed upon by Speers and desires us to issue a word of caution to the trade through the A. A. G. O. official journal.

### Omaha Will Catch Auto Thieves.

S. E. Smyth advises us that the garagemen and auto dealers of Omaha have organized to catch auto thieves. The organization will include dealers and garagemen in territory covering the radius of 250 miles of Omaha. It will receive the cooperation of all of the automobile clubs in that territory and the police departments and constabularies in that jurisdiction. If any one of these 1,000 garagemen and dealers has the suspicion that a car is not in the hands of its rightful owners, he will take down the engine number and communicate with the organization's headquarters, which in turn supplies members with the engine numbers of all stolen cars. This work should be highly beneficial to all concerned.

# Large Use of Ball Bearings

## A Symposium of Engineering Opinion in Connection with Motor Car Construction—Information of Value to Auto Mechanics

By ARTHUR V. FARR, M. E.

Author and Engineer, with SKF Ball Bearing Co.

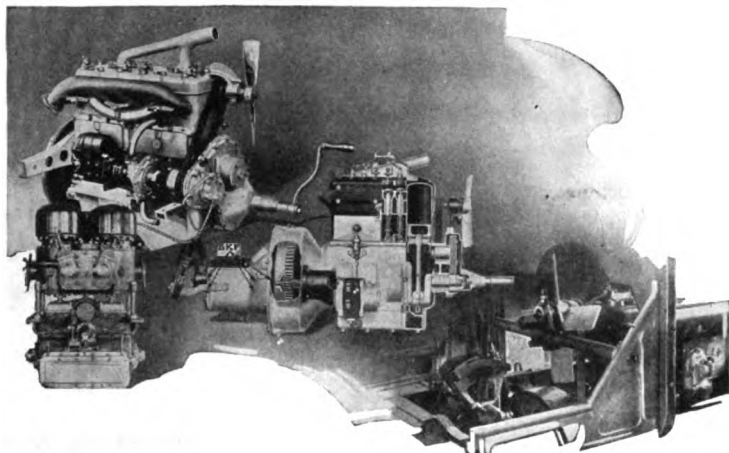
### No. 3

#### Lubrication of Ball Bearings

*F. A. Whitten—General Motors Truck Co.*—"We use a very light neutral grease or non-fluid oil in almost all of the ball

are kept perfectly tight and free from dirt and water."

*F. Mueller—Maccar Truck Co.*—"The housing is filled with good light cup grease and in addition provided with a handy grease cup."



1. Rutenber Model 20 "Four" Motor using S.K.F. No. 1205 at rear end of cam and generator shafts. 2. Ahrens Fox Fire Engine, ball bearing equipped pump. 3. Allen Car with unit power plant, showing the places where S.K.F. are used. 4. The ball-bearing fan of the Kelley truck.

bearings. In a few places heavy oil is used."

*A. L. Riker—Locomobile Company.*—"Ball bearings should be lubricated with a grease containing no acid and installed so as to be protected from all dirt, etc."

*C. W. McKinley—Willys-Overland Co.*—"We find that grease or oil is satisfactory, providing it is neither acid nor alkaline."

*W. P. Chrysler—Buick Motor Co.*—"We recommend only those mineral oils and greases which are free from traces of alkali and acid. The particular kinds of oils and greases recommended for the bearings are as follows:

"Transmission, steam cylinder oil.

"Rear axle, steam cylinder oil.

"Front and rear wheels, soft cup grease.

"Steering gear, steam cylinder oil.

"Clutch, soft cup grease."

*Russell Huff—Dodge Bros.*—"We find that annular ball bearings are very easy to lubricate and that practically any kind of oil which is used in engines or grease cups is serviceable for ball bearing lubricant."

*Fred Bizzantz—Gramm-Bernstein Co.*—"All ball bearings in our machines which undergo heavy service run in a bath of oil or light grease. A few that have a very light service to perform are packed once a year with a good supply of vaseline and

*W. G. Hall—National Motor Vehicle Co.*—"We believe that there should be a considerable source of lubricant for ball bearings, especially when used where there

must be complete in every detail. The clutch pilot bearing will not run without oil and the clutch throwout bearing cannot endure more than a few days without oil. Transmission oil must be guaranteed to be free from acids, alkalis, water or any gumming mixtures used to obtain quiet gears."

*T. P. Chase—King Motor Car Co.*—"For lubricant we believe that a good oil is without question the best lubricant to use and it is very important that the oil be clean, and a provision to be made to keep all foreign matter out of the oil and bearings."

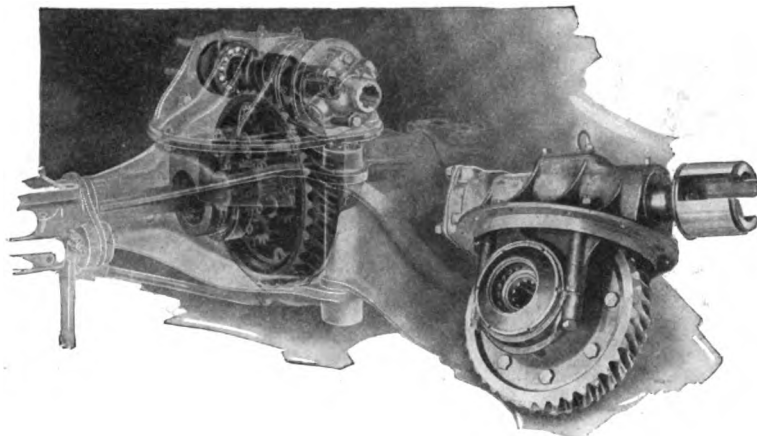
*B. B. Bachmann—Autocar Co.*—"As regards lubricant, this point is taken care of in our construction without difficulty, as the bearing is exposed to the splash of oil thrown out by the rotating parts in the interior of the motor."

*J. V. Whitbeck—Chandler Motor Car Co.*—"We find that we get the best results by lubrication with heavy oil rather than with any of the so-called non-fluid constituents."

### No. 4

#### Mounting of Ball Bearings and the Selection of Bearing Sizes

*F. A. Whitten—General Motors Truck Co.*—"We wish to emphasize the impor-



Among other S.K.F. Ball Bearings used on worm drive, the 1700 series double thrust bearing best meets the condition of motor service. Over hills and fields—on roads and in ditches, in snow and rain, this construction is demonstrating its efficiency in a manner never before equaled in the history of mechanical traction.

The Pierce-Arrow to the left, and Locomobile to the right, illustrate two sturdy worm drives which are ball-bearing equipped.

is considerable heat, as around the engine."

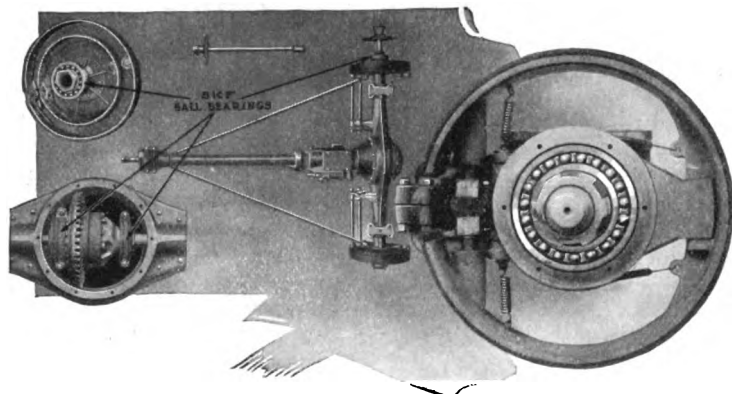
*C. Biedermann—O. Armleder Co.*—"Lubrication in most cases is readily obtained. Manufacturers of drive plate clutches, however, cannot ignore this, then the system of bearing lubrication

tance of proper mounting of ball bearings, since such trouble as we experienced with ball bearings was due to defective mountings."

*A. L. Riker—Locomobile Co.*—"The subject of proper mountings for ball bearings is one that has been gone into very

thoroughly by the engineers of the various ball bearing manufacturers and our ball bearing installations are made subject to the approval of the bearing manufacturers. In other words, applications are made practically in accordance with

the bearings are mounted to take any considerable end thrust, the surface which takes this thrust should be hardened as much as possible, and also of a fairly high carbon steel, or else case hardened, as there is a slight creeping action of the



Easy running, reliable axles have ball-bearing equipment throughout. The Lenox semi-floating axle construction shown at the left emphasizes this feature. At the right, the hub and brake of an Empire axle is shown with S.K.F. Ball Bearings.

the instructions issued by the various ball bearing manufacturers."

*E. Planche—Dort Motor Car Co.*—"A great many mistakes have been made in the use of ball bearings in automobiles.

1. Through the use of bearings too small to carry the load to which they are subjected.

2. Improper design of the parts to be carried on ball bearings.

3. Lack of support for the outer race of the bearing.

4. Poor lubrication.

5. Improper fitting."

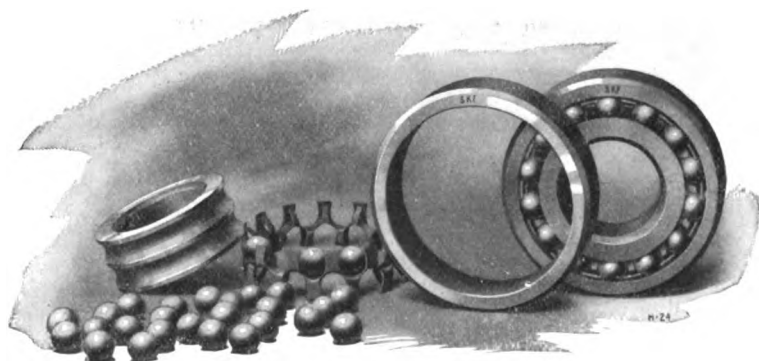
*C. W. McKinley—Willys-Overland Co.*—"To get the best results from ball bearings, I found that when the shaft rotates the inner race of the bearing should be

rotated and also a bending action; especially when the bearings are used in differentials, which have a tendency to wear down the thrust collar against the bearing race. This refers to the collar against the inner race."

*Russell Huff—Dodge Bros. Motor Car Co.*—"In the mounting of ball bearings we get the best results where one race is allowed to float in its setting, with the other held tightly against the shoulder."

*Fred Bizzantz—Gramm Bernstein Co.*—"All our ball bearings are pressed on to the shaft of the same size as the bore of the bearings. They are then secured with nuts, castellated, and a cotter pin through the slot."

*F. Mueller—Maccar Truck Co.*—"In



Cut No. 2. Disassembled view of S.K.F. Self-Aligning Ball Bearing showing inner ball race, the balls, the ball retainer and the outer ball race. Also view of completely assembled bearing.

mounted so as to be a tight fit on the shaft, or else retained between the thrust shoulders by a locking means, so as to prevent the inner race from moving on the shaft. The outer race should be mounted with a sucking fit so that it can move in its retainer and thus present various points on the surface to action of the load. Also, the outer race should be mounted in some hard metal, such as malleable iron or steel, especially if the case of the transmission is aluminum. When

mounting bearings the inner race is located properly and the outer race has a sliding fit in a dustproof housing with ample space on either side for longitudinal adjustments."

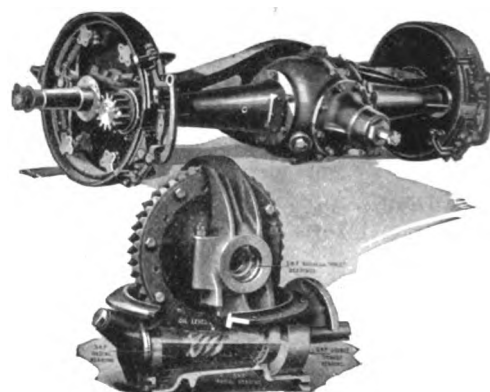
*W. P. Chrystler—Buick Motor Co.*—"All shaft bearing journals are ground, the housing seats are resumed.

"The fit of all the inner races is tight—in fact, a light press fit, with the exception of the rear wheel bearings. The inner races of the last are a hard push fit.

All inner races, except the race of the primary shaft driving pinion bearing, are tightly clamped between suitable shoulders and nuts to prevent their creeping. The one exception is made a drive fit on the hub of the pinion.

"The fit of the outer races is a hard put fit. The races of the hub bearing and that of the forward bearing of the propeller shaft are clamped tightly, the others are free."

*C. Biedermann—O. Armleder Co.*—"The bearing must be so arranged as to meet conditions of loads, speeds and lubricant, as recommended by the bearing manufacturer. All bearing manufacturers should issue very stringent instructions and data covering the entire route of the bearing from the time it leaves their factory until it is assembled in the car. Foreign matter and careless handling may injure the bearings before it is assembled in position. Each application



Top—Celfor Internal gear axle. Bottom—Worm drive construction for electric pleasure vehicle.

of a bearing should have instructions for the assembler and in all cases special tools, other than a piece of metal and a hammer, for assembly should protect the bearing. Furthermore, greater care should be exercised to design for the removal of the bearing. Here again special tools other than a piece of iron and a hammer should be advocated."

*T. P. Chase—King Motor Car Co.*—"It is very important that the bearing should be carefully handled when mounted and that both the inner and outer races be packed up with sufficient oil so that there is no possibility of distortion of the races."

*B. B. Bachmann—Autocar Co.*—"For mounting bearings one of the bearings has the outer race floating, the other bearing has the outer race clamped, while the inner races of both bearings are clamped. The inner races are a slight push fit on the crank shaft, while the setting for the outer race is scrapped to obtain a light push fit."

*J. V. Whitbeck—Chandler Motor Car Co.*—"My only suggestion for mounting is that both the inner and outer races should have a proper fit on the shaft and in case, and that where possible, either



one or the other races should be allowed to float laterally to a small amount, and if properly mounted and properly lubricated, we believe that there is absolutely no question as to serviceability."

*C. H. Fox—Ahrens Fox Fire Engine Co.*—"We have always mounted bearings in accordance with the manufacturer's idea."

## No. 5

### Service Derived From the Use of Ball Bearings

*F. A. Whitten—General Motors Truck Co.*—"In chain drive gasoline trucks ball bearings have been used where the bearings were subject to very hard services; for example, the outer end of jackshafts. We have used double row ball bearings at this point for a number of years and they have given most remarkable service. The clutch in our latest gasoline truck is carried on ball bearings and ball thrust bearings are used on all throwout collars."

*A. L. Riker—Locomobile Co.*—"If proper selection is made for the load which the ball bearing is to carry, it will last during the life of the car. Our troubles have been very few and these have been due to overload."

*W. P. Chrystler—Buick Motor Co.*—"As regards serviceability of ball bearings, we wish to say that they have given very good service."

*E. Planche—Dort Motor Car Co.*—"If ball bearings are not overloaded there should never be any question of the ball bearings giving long service and satisfaction, provided they are mounted right and lubricated properly."

*C. W. McKinley—Willys-Overland Co.*—"We find ball bearings very satisfactory, except where they are not properly protected or where foreign substances get into the lubricant. It is very essential that the bearings be protected from dirt and grit."

*W. G. Hall—National Motor Vehicle Co.*—"We believe that a ball bearing will give good service with more neglect and less lubrication than any other type of bearing."

*B. B. Bachmann—Autocar Co.*—"As to serviceability, we believe that our application is one of the best evidences of the dependability of the annular ball bearing, inasmuch as the bearing is subjected to a shock load, which alternately is applied in opposite directions, and the service in which the motor is used, being a commercial truck, where the mileage is very high. We have quite a few cars in service which are making as high as 30,000 miles a year, while 15,000 miles a year can be taken as a very conservative average. In spite of this fact, we find on examination of our records that the ball bearings are the equal of any part of the motor in length of life."

# A Personal Sketch

Question.—Who is C. M. Carr?

Answer.—The answer is given by *Chicago Advertising*, a monthly magazine published by the Advertising Association of Chicago, which bears the distinction of being the founder of the great Associated Advertising Clubs of the World.

Reprint from *Chicago Advertising*, November, 1916 Number.

Charles Mylert Carr.

That's his christening name but he goes by "C. M." and "Charlie" for short. Sometimes they call him "Colonel" but he's trying to live that down, being a pronounced pacifist although once a military man serving under the famous tactician, General James Rush Lincoln of Iowa.



Carr is a thoroughbred newspaper man but his chief distinction is that he combines trade association work with journalism and has achieved a national reputation as an expert of that type. He built a great national organization for the retail druggists and founded the N. A. R. D. Journal and two other publications for that body and made them leaders.

M. L. Cory has done similar work for the retail hardware trade, and there are others, but it is conceded that the subject of this sketch is the premier of the line. Whenever this type of man is thought of by any one posted on publicity, advertising and association trade building work, whether in New York, San Francisco, St. Paul, New Orleans or Chicago, instantly the name of C. M. Carr comes to mind.

Well, Carr resigned from the N. A. R. D. two years ago to take up work in a broader field. He was induced to join hands with John C. Phelan, W. C. Clingen and other garage men (he being part owner in a

garage himself) in making the American Association of Garage Owners the constructive, educational and administrative force in the garage and retail automobile field that the N. A. R. D. had become in the drug field. He is doing it—and then some.

In addition to being secretary-treasurer of the A. A. G. O., Mr. Carr is editor and manager of the *American Garage and Auto Dealer*, the official journal of the Association, and treasurer of the American Garage and Auto Dealers' Inter-Insurance Exchange, an instrumentality through which members of the Association may cut the cost of their fire and casualty insurance one-third to one-half the present cost.

Carr is the moving spirit of the A. A. G. O. movement as he was the N. A. R. D. movement, and he is a veritable dynamo of energy, enthusiasm and administrative power. He puts his whole soul into his work and eats, sleeps, talks, thinks—in short embodies—the cause he represents. Founded on bedrock principles of truth, progress and justice, backed by the Carr dynamic power, the cause he sponsors has got to succeed.

In one short year the A. A. G. O. and the journal representing it has gained a following of, in round numbers, 14,200 and the growth continues more rapid than ever. This is not a mere claim—the A. B. C. stands behind it.

Bill Nye and Robert J. Burdette, back in the 80's, predicted for Carr a brilliant and successful career. Bill did not live to see C. M.'s star of ascendancy rise to its present height but Bob did, and Brother Carr had the good fortune to receive the hearty congratulations of the greatly loved preacher humorist on his last visit to Chicago.

## New Safety Scheme.

For the purpose of promoting safe automobile driving at night, a suggestion has been made to the highway commissions of several states that the painting of the telegraph and telephone poles nearest to the dangerous curve or bridge or fill would decrease the danger to motorists. The driver in approaching the danger would be warned before he has run into it and will be able to avoid it.

It is proposed to paint the telegraph and telephone poles about ten feet from the ground and about a five-foot strip. This strip could be white with the exception of about a foot in the center, which could be red, and about ten poles on each side of the dangerous place could be painted. It is believed that at railroad crossings the railroad officials would be glad to co-operate, for many railroad crossings are so obscured that the driver does not know that he is approaching one until he is upon it.—Automobile Topics.

<b>ANNUAL CONVENTION</b>
<b>A. A. G. O.</b>
The Dealer and Service Organization of the Automobile Trade
<b>AUDITORIUM HOTEL</b>
<b>Chicago, Illinois, Feb. 1 and 2</b>
<b>During the Chicago Automobile Show</b>
Every Auto Dealer, Garageman, Repairman and
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Serviceman should attend. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

## Annual Meeting A. A. G. O.

The annual meeting of the American Association of Garage Owners will be held in Chicago on Tuesday, November 28. The executive members will attend and officers for the ensuing year will be elected. Prominently mentioned for the presidency are A. E. De Laruelle of Wisconsin; M. J. Laporte of Massachusetts; A. E. Querinjean of Ohio; P. M. Kimball of Kansas; J. H. Earle of South Carolina and Sam Pledger of Oklahoma. The association has increased its membership 11,000 during the past year.—*Kansas City Star*.



# Mechanical and Engineering Problems

*THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and now consulting engineer with the Western Electric Co. When shop information is desired, write Mr. Hinrichsen, care this office.*

## An Announcement.

This department is to be devoted entirely to garagemen and dealers. The aim is not to tell the car owner how to do his own repairs, but to give to the garage owner the best advice and help that can be obtained. We do not claim to know everything, but we do intend to find out anything that may be of help to our correspondents. To this end we invite communications covering any phase of the business. If you have encountered anything that seems unusual, give us full details. You will be conferring a favor on us by doing so.

If you get unusual results by following out some course of action that is strange to you, write us the whole story. It may help someone else.

If you have found an arrangement of your working space that makes for greater efficiency, send us a sketch of your floor plan.

This applies to all branches of the business and, while we do not ask you to give up any of your trade secrets, we would appreciate any and all information you feel like giving.

We will endeavor to help you solve any problems connected with the garage industry, whether they are technical or apply to the business part.

If you are planning to build or remodel, we will be glad to send floor plans and specifications for arrangements from which you may gain some valuable hints.

If your repair department, in any of its branches, is not doing as well as it should, we can analyze the situation and probably suggest the remedy.

All we ask is that you send full details as to what is wanted. Don't overlook anything, no matter how unimportant it may seem.

No names will be published, but if for any reason anyone desires the name of a correspondent, we will endeavor to obtain permission to furnish the name.

This same rule applies to makes of cars, accessories and equipments.

## Peculiar Case of Motor Trouble.

**Question.**—We have a peculiar case of trouble which has baffled us for some time. A 4-cylinder T-head motor, bore 4½ inches, stroke 5 inches, has a habit of missing on one cylinder. Repeated tests have shown the miss to be in cylinder number 2. The valves seat perfectly, the tappets have plenty of clearance, the plug

does not foul and have tried changing ignition system. When the motor is first started all four cylinders hit, but after running a few minutes one begins to miss. With the car running at 20 to 25 miles per hour or faster all four cylinders hit. As far as we can see, there is no cause for the trouble. The compression seems good and equal in all cylinders.

W. & G.

**Answer.**—Assuming that you have eliminated all possible causes of the missing from ignition and that the compression is good and equal, would suggest the following test: Try the compression carefully when engine is cold. Then after running until the miss appears, stop the motor and as quickly as possible try the compression. If done quickly enough, you will probably detect a weakness in the missing cylinder. If this is the case, remove the exhaust valve and examine the valve stem carefully. You will find that either the clearance in the guide is too small or that carbon has caked on it. Clean thoroughly or polish down as required, and the trouble will be eliminated.

\* \* \*

## Getting Rid of a Noise.

**Question.**—One of my regular customers who drives a Ford was in the other day with a strange noise, which later disappeared. The car would be running along smoothly, when, without any noticeable jerk or jar, a loud "whanging," grinding noise would commence which seemed to come from the transmission, but could see nothing wrong there. After a few yards' running, it would disappear, to occur again at irregular intervals during about twenty minutes' driving. What would you advise?

J., R. & Co.

**Answer.**—Your customer needs a new roller bearing either in the rear axle housing or at the rear of the drive shaft housing. No use to look in the transmission. Take out and disassemble the rear axle and drive shaft. It will be either the bearing for the drive shaft next to the rear axle or one of the bearings located on each side of the differential.

\* \* \*

## Engines Refusing to Take Open Throttle.

**Question.**—Can you give us some idea of the cause of some engines refusing to take a suddenly opened throttle? We seem to encounter this trouble with a number of motors with overhead intake valves and L type exhaust valves. No amount of carburetor adjustment will overcome it and we are satisfied that there is no ignition trouble.

G. & Co.

**Answer.**—If you are right about the carburetor and ignition system, and the

engine is of the rocker-arm type, that is, the inlet valves are opened from the camshaft located in the crank case, and by means of rods and rocker-arms on top of the cylinders, would suggest that you pay particular attention to the condition of the inlet valve stems and cages. If no leakage is apparent at this point, try the intake manifold for small leaks. I am of the opinion, however, that, as the trouble seems to be prevalent in a certain type of motor and not in any individual one, that the inlet valves or cages are responsible.

Let us know the results of your tests along these lines.

\* \* \*

## Starting and Lighting System Trouble.

**Question.**—I recently sold a ——— car having a ——— starting and lighting system. During the past few weeks the ammeter has indicated no charging current, but indicates a discharge when the lights are on. The battery has become nearly exhausted and will barely crank the motor.

I have examined all wiring and connections and everything seems O. K.

We have no one in this locality who is familiar with this system. A. J.

**Answer.**—It is hard to say, from your description, just what might cause this failure. There are so many things to be considered. The following directions should enable you to at least locate the trouble.

In this make of car there is located under the front seat what is known as a circuit breaker or current control relay. Take the cover off of it and you will see the contacts, which will be open. Now start the engine and speed it up. If the relay contacts close, you may know the trouble is between the relay and the battery. If not, it is between the relay points and the generator. Now stop the motor and push the relay points together for just a moment and see if the ammeter indicates a discharge. If it does, remove the generator and send it to the maker or some concern that makes a specialty of repairing such devices.

If the ammeter does not indicate a discharge, remove the relay and send it.

I am assuming that you have no suitable instruments to make tests other than those embodied in the system itself.

\* \* \*

## Too Rapid Burning Up of Platinum Points.

**Question.**—Can you give me the reason for platinum points on a ——— magneto burning up rapidly? I have three of

these magnetos giving this trouble and several of the same make that behave perfectly.  
I. N. S.

**Answer.**—The condensers have become short circuited in these three magnetos. You will find a raised cover over the armature housing between the magnets. This covers the condenser. Remove cover, disconnect condenser and replace with new one. The cost is small and they may be obtained either from the maker or your jobber.

\* \* \*

### Auto Repairs Should Be Made by Experts.

There are departments in all motor publications devoted to the repairing and troubles of motor cars in all details, but are directed toward the owner rather than the man who makes these things his business, or, rather, profession, for a thorough knowledge of this part of the business is really a professional training. The owner who attempts to make his own repairs and adjustments nearly always comes to grief and loses money in the end.

It is ridiculous for the man of no knowledge, or little knowledge of the subject, which is worse, to attempt his own repairs on a mechanism as complicated and susceptible to changes as an automobile. The same man who dons a suit of overalls, seizes wrench, hammer and screwdriver and boldly goes in where angels might fear to tread would not dream of dismembering his watch to repair it nor even explore his wife's sewing machine.

### Ten Years Ago the Horse.

Let us go back ten years to the days when the horse filled the place his car now occupies and served, as nearly as possible, the same purpose. He would not try to be his own veterinarian. No, indeed. His horse has a value of, say, two hundred dollars. It becomes ill. Does he seize knife, scissors and other surgical instruments and proceed to repair the animal? Hardly. The nearest veterinarian is called and, should the trouble be something he, the owner, has encountered before, he may try to relieve the animal's suffering and preserve its life until the expert arrives, but that is all. By the time his horse is cured, or dead, the veterinarian's bill will probably be anywhere from ten to fifty dollars, but the horse owner feels he has received value given.

Leaving out the sentiment in regard to the horse as a living creature, and putting the matter on a basis of dollars and cents, let us draw the comparison:

One horse, value.....	\$ 200.00
One automobile, value.....	1,000.00
Veterinarian for sick horse.....	40.00
Mechanic for sick auto.....	25.00

Percentage of values:

Veterinarian's bill, 20 per cent of horse's value.

Mechanic's bill, 2½ per cent of car's value. Owner repairs his own horse—loss,

\$200.00 (possible). Owner repairs his own car—loss, \$300.00 (probable).

These figures may not hold good in all cases, but they are a fair average taken from several years' observation. Neither do they cover worry, loss of time, nor spoiled clothes, not to speak of skinned knuckles and loss of religious principles. We might, however, place on the credit side of the account an entirely new and original vocabulary, perfectly adapted to addressing inanimate objects.

The man who gets the most enjoyment or greatest financial return, as the case may be, from his car is the one who unloads his troubles on the garageman.

Frequent inspection is another thing that pays well, but these inspections should be made at regular intervals and, so far as is possible, should be made by the same man. An incipient case of trouble can often be discovered and remedied by the trained man at a trifling cost which would later cause extensive repairs.

### Two Men with a Service Garage.

There is an Indiana garage that has built up quite a business of this kind. Two thoroughly competent automobile experts opened a little garage in a thriving automobile locality. They had little capital and were unable to go into the car selling business, and could only handle a limited amount of accessories. For something over a year they devoted their time to repairing only, and, as they were able to deliver the goods, established a good reputation. The work was hard, however, and the returns little or no greater than when they were working on salaries. At last the regular inspection idea occurred to one of them and they gradually worked into it.

They now have a regular clientele as large as they can handle, their work is easier and returns much greater. The shop seldom holds a car more than a few hours, except during the winter's overhauling, and their clients feel that they are getting their money's worth and more, for they find that their annual maintenance bills are less than under the old system and their car service much more dependable and continuous.

This scheme might not work out in detail the same in all cases, but the idea is good and applicable in some form to every case.

If the car owner can be brought to see the light and be trained to only do the necessary things in operating his automobile and leave the rest to the repair man, both will profit. The repair man by the larger volume of business he can do with the same working force, and the owner by the actual reduction of his repair bills, not to speak of the satisfaction of uninterrupted service.

### A Storage Problem.

One of our good members, the Owen H. Fay Auto Livery Co. (W. Wilkerson), Chicago, would like to have discussed in the official journal the question of monthly storage charges when the customer takes his car out on week-end and other long trips.

Should the customer receive a credit on his monthly account for the time the space is not required, or should no deduction be made, as the space in most cases would be held for the use of the car should it come in at any time? Should a rule be established to govern such cases, and what should the rule be?

The AMERICAN GARAGE AND AUTO DEALER would like to hear from members and readers who are confronted with this storage problem.

### Three Battery Questions.

Will you kindly answer in the next issue of your journal the following in regard to a storage battery.

**Questions.**—(1) Will a storage battery freeze in this climate? (2) What is meant by sulphating? (3) What attention should be given battery when car is not in use?

M. M.

**Answers.**—(1) Absolutely not if fully charged. When charged the electrolyte will test 1,275 to 1,300 gravity, which would remain fluid down to 55 to 60 below zero; in a discharged battery the fluid will test 1,000 to 1,100 gravity, which will freeze in zero weather.

(2) Sulphate is a deposit which forms on the plates of a battery, and prevents the fluid from getting in contact with the active material of the plates, acts as a sort of insulation. A sulphated battery's capacity to take and hold a charge is governed by to what extent the plates may be covered with this deposit. There are two causes for it, viz., allowing a battery to stand in a discharged condition by not keeping plates fully covered with distilled water.

(3) Leave battery in car, see that plates are covered with distilled water; every two weeks start motor and run for two hours, which will keep battery charged and in a healthy condition.

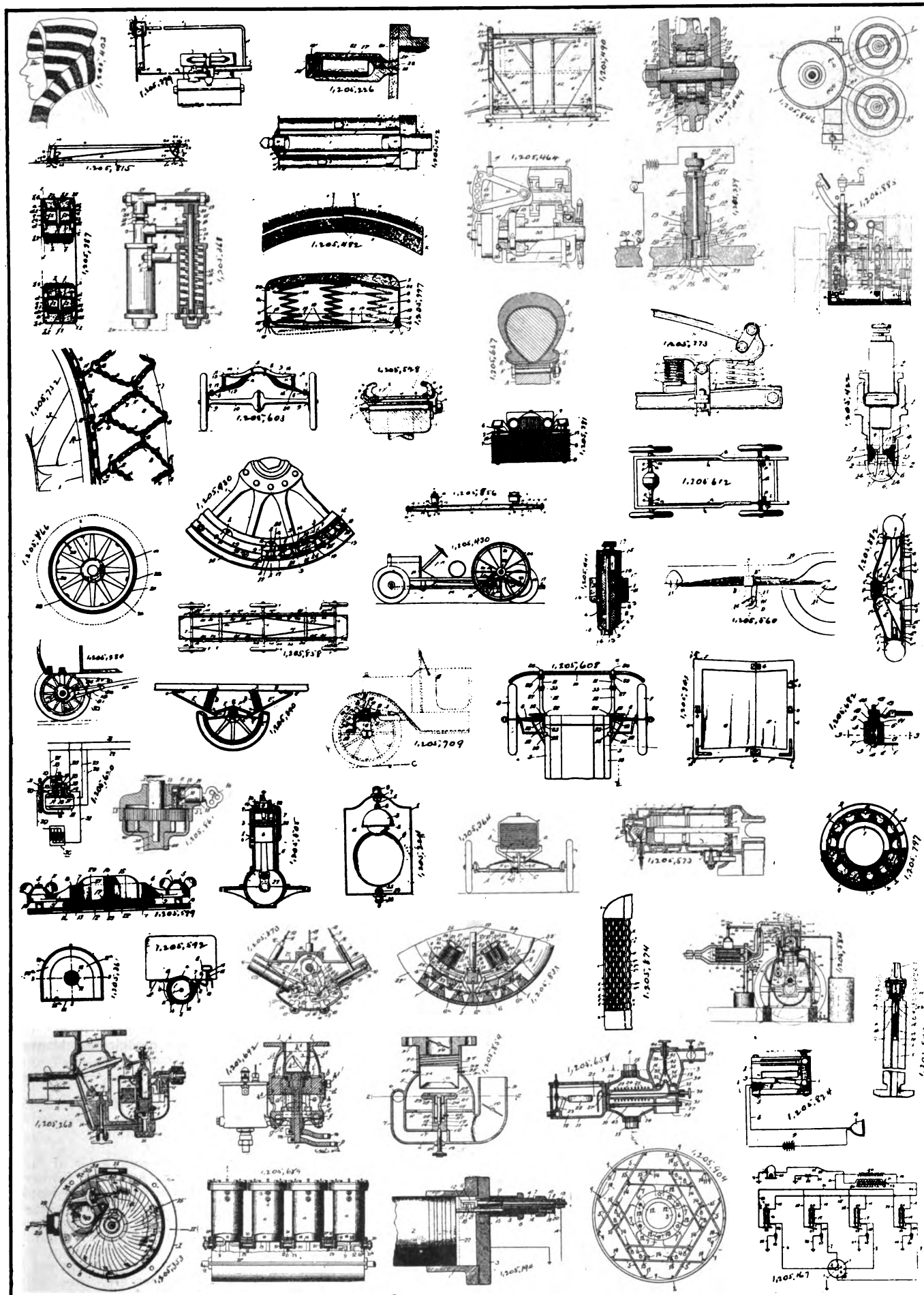
### Good Publicity Work.


Make the best possible use of the Walt Mason page in this number. Post it in a conspicuous place in your garage or shop where car owners can see it. If you desire the page specially printed on card board, please advise us, enclosing 10c in postage.

## New Patents Granted.


**Brief Titles With Numbers Enabling the Reader to Send to Us for Complete Description—Enclose 10c Each to Cover Government Cost.**

- 1,205,167. Ignition System. Simon Deutsch, Detroit, Mich. Filed March 29, 1916. Serial No. 87,391. (Cl. 123—148.)
- 1,205,194. Igniting Mechanism for Internal-Combustion Engines. William Grunow, Jr., New York, N. Y., assignor to John F. Alvord, Torrington, Conn., and William B. Thompson, New York, N. Y. Filed Oct. 28, 1915. Serial No. 58,379. (Cl. 123—162.)
- 1,205,224. Antiflare Device. William B. Koehlein, Boundbrook, N. J., assignor of one-third to Alexander Morecraft and one-third to Theodore T. Staats, Boundbrook, N. J. Filed July 22, 1915. Serial No. 41,218. (Cl. 240—44.)
- 1,205,226. Lubricating Device. Samuel E. Lawrence and George M. Davis, West Point, Ky. Filed Feb. 7, 1916. Serial No. 76,802. (Cl. 184—18.)
- 1,205,263. Carbureter. Albert G. Redmond, Flint, Mich., assignor to Marvel Carbureter Company, Flint, Mich., a Corporation of Indiana. Filed Dec. 12, 1914. Serial No. 876,800. (Cl. 261—41.)
- 1,205,264. Process of Removing Carbon from Gas-Engine Cylinders. Walter K. Rogers, Forest Hill, Md., assignor, by direct and mesne assignment, of two-ninths to Walter E. Tucker and two-ninths to Henry Ridgon, Forest Hill, Md., and one-third to Clarence B. Whitaker, San Francisco, Cal. Filed July 23, 1915. Serial No. 41,537. (Cl. 87—5.)
- 1,205,284. Brace for Vehicle Gear and Shaft Housings. Charles F. Stewart, Nashville, Kan. Filed Jan. 12, 1916. Serial No. 71,709. (Cl. 21—90.)
- 1,205,289. Sparking Plug. James Z. Tucker and Louis W. Markwort, St. Louis, Mo. Filed May 18, 1914. Serial No. 839,197. (Cl. 123—169.)
- 1,205,341. Snow-Shield for Moving Vehicles. Henry Frohnappfel, Wheeling, W. Va. Filed April 8, 1916. Serial No. 89,819. (Cl. 105—93.)
- 1,205,353. Travel-Recorder. Joseph W. Jones, New York, N. Y., assignor to The Jones Speedometer, Brooklyn, N. Y., a Corporation of New York. Filed Nov. 23, 1911. Serial No. 661,893. (Cl. 234—32.)
- 1,205,361. Non-Glaring Headlight. Harry W. Lakin, Medford, Mass. Filed Feb. 19, 1916. Serial No. 79,312. (Cl. 240—41.)
- 1,205,364. Antikicking Safety Attachment for Internal-Combustion Engines. William M. Lindley, Lawrence, Kan. Filed March 13, 1916. Serial No. 83,920. (Cl. 74—53.)
- 1,205,368. Shock-Absorber. August Magin, Rochester, N. Y. Filed March 14, 1916. Serial No. 84,070. (Cl. 267—42.)
- 1,205,373. Shock-Absorber. Benjamin F. Martz and Joseph Martz, Indianapolis, Ind. Filed Oct. 8, 1915. Serial No. 54,705. (Cl. 267—19.)
- 1,205,379. System for Indicating the Condition of Internal-Combustion Engines. Oscar Emmanuel Nelson, Oakland, Neb. Filed Feb. 13, 1915. Serial No. 8,076. (Cl. 123—198.)
- 1,205,381. Fender for Automobiles. Elizabeth T. Orton, New York, N. Y. Filed Aug. 25, 1914. Serial No. 858,514. Renewed Oct. 2, 1916. Serial No. 123,449. (Cl. 105—33.)
- 1,205,387. Roller-Bearing Cage. Julius A. Perkins, New York, N. Y. Filed Jan. 14, 1913. Serial No. 741,906. Renewed April 14, 1916. Serial No. 91,265. (Cl. 64—62.)
- 1,205,390. Combination Vehicle Suspension-Spring. Paul D. Randall, Fresno, Cal. Filed Feb. 10, 1916. Serial No. 77,519. (Cl. 267—8.)
- 1,205,403. Scarf-Hat. Nat C. Smolin, New York, N. Y. Filed Nov. 13, 1915. Serial No. 61,221. (Cl. 2—118.)
- 1,205,422. Spark-Plug. Carl F. Arnold, Watsonville, Cal. Filed Feb. 7, 1916. Serial No. 76,663. (Cl. 123—169.)
- 1,205,430. Tractor Attachment for Automobiles. Cyrus J. Bristol, Des Moines, Iowa, assignor of one-half to Fred W. Swanson, Des Moines, Iowa. Filed Aug. 22, 1916. Serial No. 116,217. (Cl. 21—114.)
- 1,205,441. Spark-Plug. Harry N. Eastman, Dayton, Ohio, assignor of one-half to Ernest A. Eastman, Dayton, Ohio. Filed March 20, 1915. Serial No. 15,679. (Cl. 123—169.)
- 1,205,449. Roller-Bearing. Orlando W. Hart, Fall River, Mass. Filed Jan. 20, 1916. Serial No. 73,167. (Cl. 64—61.)
- 1,205,452. Signal-Chime for Automobiles. Charles Paul Jones and Ida Marie Jones, Cleveland, Ohio. Filed June 1, 1914. Serial No. 842,085. (Cl. 116—59.)
- 1,205,464. Variable - Speed - Transmission Gearing. Frank J. Mack, Chicago, Ill. Filed Dec. 7, 1915. Serial No. 65,539. (Cl. 74—58.)
- 1,205,482. Brake-Shoe. Andrew H. Reid, Toronto, Ontario, Canada, assignor to American Brake Shoe & Foundry Company, Mahwah, N. J., a Corporation of New Jersey. Filed April 26, 1916. Serial No. 93,580. (Cl. 188—27.)
- 1,205,490. Automobile - Hoist. Eugene Stretch, Shelbyville, Ill. Filed Nov. 10, 1915. Serial No. 60,676. (Cl. 187—24.)
- 1,205,505. Apparatus for Employing Kerosene and Heavier Liquid Fuels in Internal-Combustion Engines. Elijah Bailey Benham, New London, Conn., assignor to Thomas A. Nevins, East Orange, N. J. Filed July 9, 1913. Serial No. 778,106. (Cl. 123—1.)
- 1,205,528. Vehicle-Wheel. Tracy W. Guthrie, Cleveland, Ohio, assignor to The Standard Welding Company, Cleveland, Ohio, a Corporation of Ohio. Filed Nov. 6, 1911. Serial No. 658,676. (Cl. 152—21.)
- 1,205,560. Cantilever-Spring Such as Is Used on Motor-Vehicles. Oliver Danson North, Chelsea, England. Filed Jan. 12, 1916. Serial No. 71,631. (Cl. 267—31.)
- 1,205,573. Internal - Combustion Engine. Harold F. Shepherd, Grove City, Pa., assignor to Bessemer Gas Engine Company, Grove City, Pa., a Corporation of Pennsylvania. Filed Aug. 12, 1914. Serial No. 856,389. (Cl. 123—30.)
- 1,205,584. Internal - Combustion Engine. John F. Wentworth, Rochester, N. H. Filed May 13, 1910. Serial No. 561,195. (Cl. 123—181.)
- 1,205,592. Automobile-Starter. Carl H. F. Bergner, Harrington Park, N. J. Filed Dec. 4, 1914. Serial No. 875,395. (Cl. 74—54.)
- 1,205,599. Vulcanizing Device. Thomas E. Dempsey, New York, N. Y. Filed Aug. 27, 1914. Serial No. 858,800. (Cl. 18—18.)
- 1,205,602. Carbureter. Thomas John Disturnal, Belmont, Ireland. Filed Jan. 11, 1916. Serial No. 71,497. (Cl. 261—41.)
- 1,205,603. Spring and Frame Supporter for Motor Cars. Joseph Dottl, Madison, Wis. Filed Nov. 20, 1915. Serial No. 62,601. (Cl. 267—19.)
- 1,205,608. Automobile-Bumper. Rollie B. Fageol, Philadelphia, Pa. Filed April 13, 1912. Serial No. 690,600. (Cl. 213—39.)
- 1,205,612. Vehicle Suspension. Bruce Ford, Philadelphia, Pa. Filed Oct. 21, 1911. Serial No. 655,987. (Cl. 267—39.)
- 1,205,620. Charging Storage Batteries. Varian M. Harris, Chicago, Ill., assignor to Henry S. Hawley, trustee, Chicago, Ill. Filed Aug. 24, 1912. Serial No. 716,808. (Cl. 171—314.)
- 1,205,657. Means for Securing Resilient Tires to Vehicle-Wheels. Orrel A. Parker, New York, N. Y. Filed Nov. 21, 1907. Serial No. 403,143. Renewed Feb. 19, 1916. Serial No. 79,468. (Cl. 152—5.)
- 1,205,658. Carbureter. Louis A. Pazandak, Minneapolis, Minn. Filed Jan. 2, 1915. Serial No. 104. (Cl. 48—107.)
- 1,205,682. Spark-Intensifier. Robert M. Sutherland, Kansas City, Mo. Filed Oct. 21, 1915. Serial No. 57,075. (Cl. 175—183.)
- 1,205,689. Valve-Operating Mechanism for Internal-Combustion Engines. Hugo C. Well, New York, N. Y., assignor of fifty one-hundredths to Frederick A. B. Meinhardt, New York, N. Y. Filed Dec. 31, 1914. Serial No. 879,914. (Cl. 123—53.)
- 1,205,709. Safety Cranking Device for Motor-Vehicles. Joseph P. Carson, Richmond, Va. Filed Dec. 23, 1915. Serial No. 68,385. (Cl. 123—185.)
- 1,205,752. Non-Skid Chain. John Kirkwood, Lenox, Mass. Filed Feb. 8, 1916. Serial No. 76,942. (Cl. 152—14.)
- 1,205,777. Spring-Seat Construction. William A. Murray and William A. Murray, Jr., Cincinnati, Ohio, assignors to The William A. Murray Spring Company, Cincinnati, Ohio, a Corporation of Ohio. Filed July 31, 1915. Serial No. 42,864. (Cl. 155—25.)
- 1,205,797. Ball-Guide for Ball-Bearings. Jakob Schmid-Roost, Oerlikon, Switzerland. Filed Nov. 12, 1912. Serial No. 730,971. (Cl. 64—59.)
- 1,205,815. Automatic Automobile-Lifter. William J. Taylor, Boise, Idaho. Filed July 19, 1916. Serial No. 110,152. (Cl. 254—91.)
- 1,205,824. Lamp for Motor-Vehicles. Charles F. Ulrich, Holbrook, N. Y. Filed Dec. 1, 1915. Serial No. 64,481. (Cl. 200—27.)
- 1,205,833. Cushion-Tire. William S. Woods, Newcastle, Ind. Filed Jan. 30, 1915. Serial No. 5,270. (Cl. 152—8.)
- 1,205,846. Carbureter. Marc Birkigt, Bois-Colombes, France. Filed Jan. 8, 1916. Serial No. 71,083. (Cl. 261—40.)
- 1,205,849. Tire-Valve. Junius A. Bowden, Los Angeles, Cal., assignor to A. Schrader's Son, Incorporated, New York, N. Y., a Corporation of New York. Filed May 6, 1913. Serial No. 765,923. (Cl. 152—12.)
- 1,205,856. Axle-Lubricator. Charles W. Cheek, East Chattanooga, Tenn. Filed Aug. 28, 1913. Serial No. 787,181. (Cl. 64—27.)
- 1,205,858. Running-Gear for Vehicles. William Corcoran, Portland, Ore. Filed Aug. 1, 1916. Serial No. 112,579. (Cl. 21—184.)
- 1,205,859. Carbureter. Hamner J. Cordle, Littleton, N. C. Filed March 16, 1916. Serial No. 84,619. (Cl. 261—53.)
- 1,205,861. Means for Locking Steering-Heads of Automobiles. William L. B. Cushing and George A. Flood, Los Angeles, Cal. Filed Jan. 26, 1916. Serial No. 74,455. (Cl. 70—90.)
- 1,205,866. Demountable Rim for Vehicle-Wheels. Otis E. Dingley, West Farmington, Me. Filed Oct. 18, 1915. Serial No. 56,410. (Cl. 152—21.)
- 1,205,873. Change-Gear Mechanism. Gerald A. Eddy and John Franklin McNutt, Los Angeles, Cal., assignors of one-third to said Eddy, one-third to Edgar J. Belk, Los Angeles, Cal., and one-third to John Hettermann, Louisville, Ky. Filed July 23, 1912. Serial No. 711,108. (Cl. 74—58.)
- 1,205,874. Radiator or Cooler. Edward H. Ellison, Jamestown, N. Y., assignor to Jamestown Car Parts Manufacturing Company, Jamestown, N. Y., a Corporation of New York. Filed Nov. 1, 1915. Serial No. 59,097. (Cl. 257—130.)
- 1,205,882. Vehicle-Wheel. Eugene Gadoux, Asnieres, France. Filed Sept. 10, 1913. Serial No. 789,197. (Cl. 21—69.)
- 1,205,885. Starting Device. Ernest Gréby, Issy, France. Filed July 6, 1914. Serial No. 849,205. (Cl. 123—187.)
- 1,205,904. Spring-Wheel. Robert M. Keating, Springfield, Mass. Filed April 16, 1914. Serial No. 832,202. (Cl. 152—28.)
- 1,205,930. Tire. James Henry Preston, Medicine Hat, Alberta, Canada. Filed Jan. 18, 1916. Serial No. 72,846. (Cl. 153—37.)






CO-OPERATION  
DESTINED TO BE THE  
IN THE




PROTECTION  
LARGEST SINGLE UNIT  
LABOR WORLD



# BUREAU OF REGISTRATION AUTOMOBILE WORKERS


FOR EVERY  
EMPLOYEES IN THE

RECOMMENDATION



CLASS OF  
AUTOMOBILE INDUSTRY

EMPLOYMENT



### Registration vs. License.

The fact that there has been no union nor association of automobile workers has long been deplored and when this department of the A. A. G. O. was first opened it met at once with a hearty response from workers of all classes.

Now comes a suggestion from the Milwaukee Garage Association that the state adopt a license system for garage mechanics similar to those in vogue in the medical, dental and veterinarian professions, the barber and other trades, the principle involved being that the public welfare demands qualified and certified service. Their contention is that the car owner does not want his car tinkered by a slipshod mechanic, and that the state should have a board of examiners and issue certificates only to those who have proved efficient and capable as the result of an examination.

This is all right in its way, but such legislation will not take into consideration all of the workers' interests as does the Bureau of Registration of Automobile Workers, which not only performs the functions of a state board of examination, but goes very much farther and offers members such additional benefits as co-operation, protection, recommendation and employment. This is the workers' organization pure and simple and every worker in the industry who believes in better working conditions, higher wages and a powerful organization to guard all workers' interests should consider it a privilege to be invited to join and lend their aid to this movement. There are also many reasons why employers should give this organization their unqualified endorsement, among the principal ones being the fact that a higher class of investigated and recommended help is thus made available for them and by making their wants known to either the A. A. G. O. employment department or to this department they will in the majority of cases be put in touch with the right man for the place with but very little if any delay, and this will be found true of almost any part of

Registered members of this Bureau in either shop, garage or office are offered a special cash prize of \$5.00 for the best suggestion of how to improve old methods of doing daily duties or time-saving stunts.

the country, as both associations are now reaching from coast to coast and Canada to the Gulf.

As an illustration of the immense benefit to both employer and employee from the close co-operation of the A. A. G. O. and the B. R. A. W. is shown by the two following outstanding transactions during the past month.

#### Case Number One.

The A. A. G. O. member in a nearby state wrote that he required a repair man, first class on motors, thoroughly up on electrical equipment, of excellent morals and highest character references. One who would come prepared to equip a shop with up-to-date, time and labor-saving devices and willing to work hard to build a permanent business success, assuring such a man large concessions and their active co-operation.

After carefully looking over the list of available prospects among the B. R. A. W. members who would seem, from the information on file, most likely to fit the requirements, we selected a number and began corresponding with them, with the result that we succeeded in getting a man who fitted the place as though the specifications were written to fit his case alone. He wrote, after being settled: "It was certainly a lucky day for me when I joined the B. R. A. W. I might have looked all my life to have found such an opening as you found for me, without effort on my part."

#### Case Number Two.

A local A. A. G. O. member had a somewhat similar opening for a good repair man. They offered a shop fully equipped, with plenty of work on hand and in sight—no money required, just a 25 per cent commission on business done. It would seem that there would be thousands of men looking for such an open-

ing, but they claimed to have tried a large number without finding one who was satisfactory to both themselves and their customers. When the worker was all right the work was not and vice versa, so they appealed to us to make good on the claim that B. R. A. W. workers were satisfactory workers. So began a search for the *right* man for him. We had to go quite a distance to get him—but the point is, *we succeeded*, and here is what he had to say: "From both the employer's and the employee's standpoint, the value of such services as you people perform can't be overestimated."

#### No Recommendation—No Card.

Minneapolis, Minn., Sept. 29, 1916.

B. R. A. W., Chicago, Ill.

Gentlemen: I received your letter of the 23d and was glad to hear from you. Enclosed find \$2.50 for fee and dues.

Send my registration card, too, at once.

Yours truly,

Chicago, Ill., Oct. 3, 1916.

Minneapolis, Minn.

Dear Mr. \_\_\_\_\_:

Received your remittance, but you failed to enclose the qualification blank properly filled in.

Enclosed find another with stamped envelope for your early attention.

Sincerely yours,

B. R. A. W.

Minneapolis, Minn., Oct. 12, 1916.

B. R. A. W., Chicago, Ill.

Gentlemen: I received your letter of the 3d inst. I can not get my former employers to sign qualification blanks.

Yours truly,

Chicago, Ill., Oct. 13, 1916.

Minneapolis, Minn.

Dear Mr. \_\_\_\_\_:

If, as you say in your letter of the 12th inst., you can not get your former employers to sign the qualification blank, we are forced to decline to issue a registration card in your case, and are therefore returning your remittances. Find same enclosed.

Assuring you of our regret at not being able to serve you, we are,

Very truly yours,

B. R. A. W.



# The Law *and* The Garage Trade

*THIS department is edited by CHARLES C. BOMBAUGH, LL. B., general attorney of the American Association of Garage Owners, and a prominent practitioner in the federal and state courts; also lecturer and writer on commercial law. When information on any legal problem connected with the operation of your business is wanted, write this department.*

## Beware of Car Company Frauds.

During the last month the attention of our legal department has been called to a flagrant fraud committed by the Hercules Motor Car Company formerly doing business at New Albany, Ind.

In this instance some agent representing this company appeared in Alliance, Neb., and solicited one of our members in that city to make application for the exclusive right to distribute Hercules motor cars in that city, requiring the auto dealer to deposit the sum of \$300, which was supposed to be the evidence of the good faith of the agent making the application. The \$300 was to be secured by a so-called mortgage certificate which was a lien upon all the property of the Hercules Motor Car Company.

This certificate is absolutely worthless—no security whatever—and we find on investigation that thousands of dollars worth of claims against this company have been in the hands of attorneys at New Albany, Ind., who were obliged to return the same with advice that claims were uncollectible. The Hercules Motor Car Company are no longer in business and are supposed to have been closed out on foreclosure of a mortgage.

There are many other frauds such as this being worked upon the automobile dealers and garage owners throughout the country, and it would be well to investigate thoroughly before entering into any contracts with them or with anyone until the full facts are known.

\* \* \*

## Wife Is Responsible.

A car was stored with a garage owner in Pennsylvania, and when the garage owner seeks to collect for storage he is informed that the wife of the party bringing the car into the garage was the owner thereof. The garage keeper has voluntarily parted with the possession of the car, and desires to know what can be done under the circumstances to enforce collection of this claim.

On the theory that the husband was the agent for the wife in bringing the car into the garage, the keeper of such garage can successfully bring suit against the wife and enforce payment from her.

\* \* \*

## Forcing Sales.

Various methods of so-called force sales are being pursued by many manufacturers

of different accessories supposed to be salable among automobile owners. The salesman will call upon the garage keeper or auto dealer requesting the privilege of sending a few packages of the various merchandise, and, after securing the consent of the auto dealer, departs. A short time thereafter a great quantity of the merchandise will be shipped in to the garage dealer, and even though the party receiving the same advises the manufacturer that he will not accept the supposed order, the manufacturer will invariably reply that they will not accept the goods in return—that the transaction was an outright sale.

Under the situation as outlined, it is absolutely the right of the garageman or automobile dealer to decline to pay for anything which he has not ordered and purchased, and to notify the manufacturer that the articles are there subject to his order, and that if not called for within a specific length of time that the same will be sold for storage charges.

\* \* \*

## Not Liable for Chauffeur's Joy Ride Damage.

A question submitted to this department from a Pennsylvania garage keeper was regarding the liability of a garage keeper for permitting the chauffeur in the employ of the owner of the car to take the car out to be used for "joy riding." Recently the car was brought in some time after midnight in a damaged condition. The garage keeper had no way of knowing at the time the chauffeur called for the car that he had taken the same out for a "joy ride." The owner of the car now threatens to sue the garage keeper for damages.

We are of the confirmed opinion that the garage owner is not liable unless he had actual knowledge of the contemplated "joy ride" or was grossly negligent in permitting the chauffeur to take out the car. If it was customary for the chauffeur to call for the car, and there was nothing out of the ordinary to place the garage keeper upon notice, he is not liable.

\* \* \*

## Needs a Local Attorney.

We have an inquiry from Indiana regarding how to proceed (in detail) to foreclose a lien on a car on which repairs have been made.

As we have said many times before, it is always advisable to handle the matter through some local attorney so that the matter can be taken care of correctly and thus avoid any liability for damages in the future. The Indiana lien law gives the garage keeper a lien for storage, supplies and for repairing an automobile or motor truck, and also provides that such lien shall

be foreclosed in the same manner as equitable liens are foreclosed in the Circuit Court of the county where the automobile or motor truck is located by the filing of a complaint at any time within one year from the failure or refusal of the owner of the car to pay charges, etc.

We are always glad to advise as to the general provisions of the various legal questions but believe that the safest way would be to handle the matter through local attorneys.

\* \* \*

## Damage from Weather.

From Pennsylvania comes an inquiry regarding the liability of a garage owner for negligently leaving a car out in the weather and causing considerable damage to the engine and other parts of the car.

The principal question submitted in this instance was whether the actual owner of the car could recover for damages, the doubt being raised by the fact that the old license issued to the former owner of the car was still on it at the time it was taken to the garage. If it can be established regardless of the license number on the car that the same belonged to the party taking the same into the garage, the garage owner is liable for whatever damages are proven on the trial.

\* \* \*

## Can Regain Car Unless Exempt.

A question submitted to us from Oklahoma: The car was taken from the garage keeper in his absence by the owner thereof, leaving a bill for work and supplies amounting to \$27.50. An attachment was sued out and the car levied upon. Thereafter the owner replevied the same. The advice requested was as to the advisability of securing an attorney to look after this litigation.

It is by all means advisable under such circumstances to be represented by competent counsel, and in this particular case we can see no reason why the garage keeper should not prevail unless the owner of the car claimed and was allowed the same as exempt. Of course, if it was exempt, under the laws of Oklahoma, he would be entitled to replevy it from the officer holding the same under the attachment.

\* \* \*

## Garageman Acts for Owner in Latter's Absence.

According to a case which has just been decided by the Court of Criminal Appeals in Texas, a garage keeper acts for the car owner when the latter is absent. The case is that of George Patterson from Grayson county, convicted and sentenced to jail for six months for driving a car without the consent of the owner who had left the

machine in a garage for the night, to be cleaned and called for the next day. He pleaded that he had the consent of the man in charge of the garage to take and drive the car. It was contended by the state that the statute where it uses the word owner was exclusive, and use of a car without the consent of the owner in person constituted violation of the statute. He was convicted in the lower court, but the appellate court reversed and remanded the case.

"We do not agree with that contention" says the court. "Parties hiring an automobile from a garage or using it by designation of the proprietor ought to be excused from criminal punishment. This matter should have been taken into consideration in the trial."

### The Garage Sunday Closing Case.

A. J. Loftis, proprietor of the New Stratford Garage, Wayne, Pa., reports a victory in the Sunday closing garage case that has attracted considerable attention in Pennsylvania. At the original trial the verdict was adverse, but on appeal to a higher court where the issues were presented to a jury, a favorable verdict was returned in nine seconds, the prosecution having the costs to pay. The victory means the proposition that garages should keep open on Sunday as a public necessity is sustained.

### Can't Keep Us Down.

A. Pulaski, manager Elmer Iron Works, Elmer, Neb., writes the A. A. G. O. as follows: "Mr. Jonah was a good man and a whale could not keep him down. It seems to take more than that to keep the A. A. G. O. down and, if possible, we will not let you be kept down, so here's a check for \$4.00. Keep the good work going. You are doing wonders." This notation was on the bottom of a renewal statement sent for \$2.00—\$1.00 A. A. G. O. dues and \$1.00 for subscription to the journal.

### Petitioning Congress to Increase Gasoline Supply.

Petitions are in circulation asking Congress to pass the Ferris bill which will throw open five million acres of oil lands to general leasing under rigid anti-monopoly restrictions. The bill has passed the House and is now on the Senate calendar as unfinished business. By increasing the supply of crude oil the gasoline supply will be enlarged and the price lowered, is the hope and belief of the American Association of Garage Owners under whose direction the petition campaign is being conducted.—*San Francisco Chronicle*.



A. A. G. O. OFFICE,  
1108 Woodworth Bldg.

E. H. PULLMAN,  
Representative.

### National Legislation and Governmental Facts Regarding Auto Trade.

Washington, D. C., December 1.—With the reconvening of Congress on December 4 begins again the fight for cheaper gasoline. There was on the House calendar the bill of Representative Steener-son, of Minnesota, calling on the attorney-general for information as to whether or not prosecutions have been instituted against refiners and jobbers in gasoline for violation of the anti-trust laws. This had been reported adversely by Representative Carlin of Virginia from the judiciary committee.

There was also pending the Morrison bill authorizing the Interior Department to accept assignment of patent for improvements in the manufacture of gasoline. This had been reported by Mr. Morrison from the patents committee.

Other automobile legislation is probable. A bill by Representative Adamson of Georgia is pending to regulate the interstate use of automobiles using public highways. It has been reported by Representative Decker from the commerce committee.

### Department Information.

In an announcement that ten men are wanted by the government to study foreign markets for American products, the Department of Commerce says a number of them are wanted to look into the possibility of trade in motor vehicles in Russia and the Far East.

In November the War Department received bids on 1½-ton trucks for use in the signal corps.

The Treasury Department has allowed customs duty drawback on gasoline motors manufactured by the Rochester Motors Co. of New York with the use in part of imported clutch linings.

Customs duty drawback on automobile chassis manufactured by Fabbrica Italiana Automobile Torino of Poughkeepsie, N. Y., with the use of imported materials, has been allowed by the Treasury Department.

The demand for American automobiles is steadily increasing in Singapore, according to a report from Consul Campbell to the State Department.

"The American car has found a permanent place in this market," he says. "The available supply of moderate-priced cars cannot fill the demand. Traveling representatives of American cars report that their cars are sold out in advance and that

sales are only limited by inability to secure shipping space for delivery."

The Department of Commerce reports that an automobile dealer in Spain is desirous of purchasing American automobiles. Correspondence in Spanish is preferred.

An established firm in Switzerland is desirous of representing American manufacturers of automobiles and accessories.

### In Chili.

The commercial attache at Santiago reports that the growth of the automobile business in Chili has been remarkable. There are 1,300 cars in Santiago, several hundred of which are used as taxicabs at \$1.10 an hour or 22 cents a trip for one person in certain limits. The most popular cars are gasoline broughams, limousines and landaulets. The Chileans prefer a decorative finish and almost all the cars are ornamented with brass figures over the radiator. Agents are advised to send black and dark blue cars except on special order. The underslung type is rarely seen.

There is talk of building a highway between Santiago and Valparaiso, and if it is, there would be an increased demand for touring cars. All cars have a chauffeur, who sits on a small seat behind, as it is against custom for the driver, who is the owner, to change a tire or crank the machine.

The car is left with the chauffeur to prevent it being stolen or injured. The consul says American runabouts with a third seat behind, to be folded into the body when not in use, should find a market in Chile. There is an undeveloped field in electrics. The city has a lack of repair mechanics and charging facilities. There is a limited market for a smart high-priced American limousine type. Trucks are being used in the nitrate fields with good results.

Gasoline was formerly subject to fluctuations in price, but the West India Oil Co. carries a stock and quotes prices that vary with exchange but are steady in comparison with former times. The maximum price paid during the last few months for the best grade of gasoline was \$5.45 per case of two 5-gallon tins. Cheaper grades are sold and used by the taxicabs.

### In Ceylon.

Ceylon recently imposed a 33 1-3 per cent ad valorem duty on imported motor cars. One firm received 100 American cars before the tax went into effect. The tax

will increase an American 5-passenger touring car from \$1,685 to \$2,255 and the price of another from \$1,700 to \$2,255.

The duty will not affect the low-priced cars so much. The object of the law is prohibition. If imports continue in normal quantities it is probable that importation of cars will be prohibited entirely. Trade in motor lorries will be stimulated. There is said to be a market for 500 trucks.

#### A Fuel Substitute.

English inventors are working on substitutes for fuel for motor vehicles. Among those brought out is the lightning motor fuel. It is claimed the price of the substitute is 50 per cent below that of gasoline or 37 cents against 73 cents a gallon. It consists of 50 per cent of petrol and 50 per cent of chemicals. Another substitute is an intermediate between petrol and oil and has a flash point. It is an oil and not a spirit and can be stored like lamp oil. The car is first started with petrol and then runs along on the substitute. Some are mixing petrol with paraffin, but it is inconvenient, smelly and affects the metal parts.

The Interstate Commerce Commission has ordered the following refunds for overcharges on shipments of automobiles: \$7.73 to Portage Boat & Engine Co., shipped from Toledo to Portage, Wis.; \$13.88 to Edgerton Motor Auto Co., shipped from Toledo to Edgerton, Wis.; \$10.08 to Reo Hardware & Auto Co., from Lansing, Mich., to Reo, Wis.

#### Washington Locally.

The present fall has been notable for the many thefts of automobiles in this city. The police are assisting owners in protecting their cars.

The Record Auto Co. has been reorganized and incorporated with larger capital, \$100,000. The officers are: President, U. F. Hale; vice-presidents, J. N. Garber and B. F. Garber; secretary-treasurer and general manager, M. A. Bayles.

The Hurley Motor Co. has incorporated here with a capital of \$12,000. The incorporators are Alexander J. Taylor, Leon S. Hurley and Addie H. Hurley.

Of the 759 automobiles imported into Java for the first half of the current year, 668 cars came from the United States, fifty-three from Italy and thirty-two from the Netherlands.

The Civil Service Commission will hold examinations on December 26 to secure petroleum economists and accountants for the Bureau of Mines, at salaries from \$1,800 to \$2,500. The economist will be required to gather statistics on the distribution of crude petroleum and refined products and to investigate conditions affecting the question of supply and demand with a view to keeping the public and petroleum industry informed. The appointee will be required to have ability to meet people and deal with the public. The accountant's duties will be to investigate the

systems of accounting and costs in various branches of the petroleum industry. He will also be required to have had at least two years' experience in charge of accounting, including cost accounting, covering drilling for and producing of oil and gas, and the manufacture of gasoline from natural gas.

In a recent address on "Safety First," Superintendent of Police Raymond W. Pullman said that despite the increased number of automobiles, Washington was one of the few cities showing a relative decrease in accidents. He favors the annual licensing of motor vehicles. He said that from two to five thousand "dead" numbers are now in Washington and that some people make a practice of selling these to Maryland motorists visiting the city. The existence of many dead numbers also makes the theft of autos easier. The police chief said there was less speeding here than formerly. He advocated more motorcycle policemen for the force to check up motorists who now and then break loose and run from forty to fifty

**ANNUAL CONVENTION**

**A. A. G. O.**

The Dealer and Service Organization of the Automobile Trade

**AUDITORIUM HOTEL**

**Chicago, Illinois, Feb. 1 and 2**

**During the Chicago Automobile Show**

Every Auto Dealer, Garageman, Repairman and  
☐ ☐ ☐ Serviceman should attend. ☐ ☐ ☐

miles an hour in the heart of the city. He said his department revoked licenses of persons driving while under the influence of liquor. Twenty-three such revocations were made last year.

D. E. Thompson, at a meeting of the Safety First Association, urged that both front and rear licenses be used.

The District Commissioners have accepted the following bids for motor vehicles for service in the government of the District of Columbia:

From Harper-Overland Co., 750-pound truck, \$540; 750-pound truck chassis, \$600; three two-passenger roadsters, \$1,485; three five-passenger touring cars, \$2,085.

From Chester Henry Warrington for Chandler type, seven-passenger automobile, \$1,200.

From Lippard Stewart Motor Car Co., 1,000-pound passenger carrying truck, \$1,446.

From Brockway Motor Truck Co., two 1½-ton trucks, \$3,500.

A firm in Chile desires to secure agencies for American manufacturers and exporters of automobiles and gasoline. Correspondence in Spanish may be had with the Department of Commerce at Washington.

A municipality in Canada is contemplating the purchase of a motor-driven fire truck.

A firm in Denmark desires to represent American manufacturers and exporters of

automobiles, motor trucks and motorboats who are interested in extending their business in that country and in Norway and Sweden.

A commission agent in Greece desires to represent an American manufacturer of automobiles, 3-horsepower to 15-horsepower.

The Interstate Commerce Commission has authorized the establishment of through rates on automobiles and other self-propelled vehicles and parts thereof from Indianapolis, South Bend, Chicago, Elgin, Streator, Springfield, Galesburg, Peoria, Rockford, Dubuque, Milwaukee, Waukesha and points taking the same rates to points in Alabama, Florida, Georgia, Kentucky, North and South Carolina, Tennessee and Virginia on the basis of the lowest combination of intermediate rates to and from Ohio River crossings to Virginia cities and to make these rates applicable via all lines and gateways.

The Cook & Stoddard Co. have moved into their new service station in the block bounded by Eighteenth and Nineteenth, L and M streets, N. W., a short distance from the salesroom. The building is a three-story brick with alleys on the sides. The building is finished in the interior of concrete, fireproof, and is equipped with a large electric elevator. The three floors are 54x90 square feet, providing a total accommodation for Cadillac cars of 15,000 square feet. The first and second floors are used by the service department, the third story being for dead storage only. There are two entrances on the main alley. The former service station in the rear of the salesroom on Connecticut avenue will be used for fitting out cars for the road and as a salesroom for used cars. The new service department was put in operation late in November and is in charge of Robert Y. Geib.

The Chevrolet Motor Co., at 1218 Connecticut avenue, has moved its service station from the rear of 1116 Fifteenth street, N. W., to the Twenty-fourth and M streets garage.

A monster automobile parade with appropriate pageantry inaugurated Washington's part of "America's Electric Week," beginning December 2.

A firm in Holland desires to represent American manufacturers of motor cars, motors and motorcycles.

The agent in Greece of an Illinois manufacturing company desires to be placed in touch with manufacturers of automobiles and motorcycles.

The motor car is taking the place of the horse-drawn vehicle in Martinique and there is a demand for light, low-priced cars. A few auto trucks have been imported, but the demand for them is not great. In 1915 there were sixty-three automobiles imported into Martinique, of which number fifty-eight came from the United States.

(Continued on page 41.)

# **Garage *and* Auto Dealers' Insurance**

Fill in the Inspection Statement below, completely, not partially, and let us "show you." Building must be constructed of Brick, Concrete or Cement Block. Liability Insurance may be obtained by any member.

## INSPECTION STATEMENT.

File No. ....

Inspection date....., 19..... Made by.....

Name of Assured..... Business.....

Street Address of Assured.....

County..... Town..... State.....

Other occupancies ..... What is their Business?.....

Number of Floors and Use of Each.....

Construction of Building..... Elevators, if any.....

Brick, Tile, Concrete or Cement Block.....

Floors, Cement, Asphalt, Wood..... Posts, Wood or Iron.....

Beams, Wood or Steel..... Ceilings, Open or Sheathed, Lath and Plaster.....

Number of Sections..... Frontage of Building..... Length of Building.....

Exposures to Building: North..... South.....

East..... West.....

Outside Protection..... Inside Protection.....

Is Gasoline Tank Outside of Building?..... Is it an Approved Type?.....

Name of System and Size of Same..... Watchman.....

Number of Fire Extinguishers and Make.....

Is the Fire Department a Paid or Volunteer Organization? .....

Name of Owner of Building..... Value of Building.....

Value of Contents Excluding Automobiles..... Is Garage Open at All Hours?.....

Present Rate on Building..... Present Rate on Contents..... Expiration.....

I hereby submit the above schedule, which is true to the best of my belief, and request a rate for Insurance.

[This information confidential.]

Name.....

### Important Suggestions.

We hope our members will scrutinize very carefully and closely propositions made to them by risk concerns on insurance, both fire and liability. We have been planning and devising coverages on insurance designed for the fullest protection of the garage and auto dealer. There is now being attempted imitations of our plan by privately owned institutions who have not the garageman's interest and welfare in view, but their own aggrandizement. We therefore would like to know from our members as to the activities of these concerns.

Our every step has been submitted to the Insurance Department of the State of Illinois which requires probably more than any other state the consideration of the proposed beneficiary of our plans, the garage and auto dealer.

We have been guided by the Insurance Department because we believe as an association that such agencies are intended to conserve the interests of the public.

### A Shortsighted Policy.

It is surprising to us the number of our members who take chances by not carrying any insurance whatever. They must be aware that their business is in jeopardy every day they operate.

To many it would mean the destruction of their whole life's work and possibly the ruination and embarrassment of their families and friends. This department receives information of fires occurring in all parts of the country and it is appalling how many times we read the lines NO INSURANCE or ONLY PARTLY INSURED. We say it is a bad business policy and one on which no garage man or auto dealer can hope to build up a credit standing.

You cannot obtain a credit consideration or certain advantages in carrying stock without the employment of your own capital unless you at least carry ample fire insurance and sufficient liability insurance where your business is exposed to public liability losses.

Up to date the rates on both fire and liability insurance to the garage and auto dealers have appeared too big a burden for him to bear and cover his various liabilities adequately.

This may all be changed by the co-operation of garage owners, auto dealers, and repair shop owners with the insurance department of the A. A. G. O., whose purpose it is to lessen the burden of both classes of insurance premiums.

We are building an Insurance Exchange for you with all the modern safeguards thrown around it for protection. *It is not privately owned.* Its service is for the garage and auto dealer who is a member of the A. A. G. O. and we want your support and co-operation.

**INSURANCE is as necessary as any part of the garageman and auto dealer's overhead expense.** The news columns of the daily papers make it very evident. There is no good reason to do without it when it is possible to obtain insurance through your own organization at from 30 to 50 per cent below regular rates.

#### Does It Pay?

*Silver Creek, Neb., Oct. 18.—Fire starting from a gasoline vulcanizer destroyed the Brown & Lucas garage here, together with seven motor cars stored by local residents. Brown & Lucas estimate loss at \$10,000. No insurance. Losses on cars destroyed \$5,000; none insured.*

*Fire caused by gasoline from a lighted match destroyed the Portable Garage in the Morgan Block, Ramona, Ohio, including three automobiles. The loss was total. NO INSURANCE.*

*Fire was caused by a gasoline explosion in the Rasmussen automobile garage at Clinton, So. Dak., recently. A stove and a careless employe brought about the accident. NO INSURANCE.*

*Fire caused a limited damage to the Frost Garage, Sodus, N. Y., Nov. 7. All automobiles were removed. NO INSURANCE was carried.*

*Newport, R. I., Nov. 9.—Fire starting in battery room of garage swept building and Hotel Dinsdale adjoining; damage between \$40,000 and \$50,000. Garage at Berkely avenue and East Bowery street, owned by Karl Bostel, housed 40 automobiles; only five saved. Two cottages under construction were also damaged. NO INSURANCE.*

*Coroner John V. Bandell, of West New York, was a heavy loser by fire early this morning when four automobiles—two touring cars, an ambulance and an undertaker's wagon—were burned in his garage at Eighteenth street and Van Buren place. THERE WAS NO INSURANCE.*

### Protecting Car Owners Against Certain Damages.

The A. A. G. O. (American Association of Garage Owners) through its insurance department has devised a form of contract which protects owners of motor cars against damages by collision or other accidents which occur, either in the garage or outside, when in the possession of the garage owner or his men.

Under the law that ordinarily applies, the garageman is not liable for any damage to the car of a customer unless he or his employe in some manner contributes to or causes the damage by negligence or carelessness. Under the coverage of the A. A. G. O. contract garagemen are fully

protected and in turn can and do guarantee absolute protection to car owners who are customers of theirs.

The motor car owning public are not familiar with this condition, and on its being brought to their attention are certain to be keen to avail themselves of this added security for their property when it is in the custody of a garage keeper, repair shop man, or storage garageman.

Insist that your garageman guarantee you full protection when you leave your car with him, Mr. Automobilist.—*Boston Globe.*

### Hardware Association's Insurance.

The hardware dealers throughout the country enjoy probably as much as any other trade the benefits of co-operative insurance. It must indeed be flattering to members of these associations when they can save 50 per cent on their insurance premiums not alone on their stocks of merchandise but they go as far as covering the members' homes and their household furniture.

Their statements of past performances is very reassuring and A. A. G. O. members should not hesitate for a day in co-operating with the officers and Insurance Commissioner in building up an institution to serve their own purpose and which is so sorely needed right now by garage and auto dealers all over the country.

### Reliability of Old Line Casualty Companies.

Policy holders of several prominent Eastern stock casualty companies have been on the anxious seat during the past few months and many with compensation claims and lawsuits for large amounts on their hands are in grave doubt as to whether the companies will be in existence when these claims must be met. The officers of one company are under indictment, in another serious peculations have been uncovered resulting in an impairment of several hundred thousands of dollars.

In one case the stockholders have been assessed 50 per cent on their holdings and if this is not paid in full the policy holders will be under the painful necessity of paying a large part of their pending claims themselves. The stock companies in arguing against interinsurance love to say that their policy holders are done when they pay their premiums and that no matter what the losses no further demands or assessments can be made on them. Cases are not rare, however, where policy holders have had to pay thousands of dollars in judgments because the companies having frittered away their funds in high finance, were not in existence to pay them.

In interinsurance, shady investments and speculating of this kind could not occur, as an advisory committee of your own members has absolute control of the disposition and investment of your funds.



# Taking Book Out of Bookkeeping

## Necessity of Quicker and Easier Methods of Showing Financial Standing of a Business—System Applicable to Garages and Auto Dealers

By CARL H. FAST

*Editor's Note.*—This is the first of a series of articles written for this magazine on a most timely subject. Mr. Fast, formerly of New York and Cleveland, and now president of a Chicago corporation, has been frequently referred to as a rare combination of the "Analyst, Tool-maker and Teacher of Modern Business." As an efficiency expert, he has served a great many business concerns, large and small, and in a great many lines of activity.

He has devoted the last three years of his life to the creation of a series of exceedingly simple methods and system devices, which take the "book out of bookkeeping," and make efficiency possible to the "big field of little business." A great obstacle to the adoption of better methods and systems in the greater part of the business world has been the cumbersome, clerical red-tape and detailed accounting which most "systems" call for.

The present movement towards commercial preparedness and business efficiency is making itself felt so strongly in the automobile industry that we are especially fortunate, at this time, in securing these articles, which will show every garage owner how, entirely without accountancy or bookkeeping knowledge, he can keep his business on an economical and profitable basis.

### Automatic System for Auto Men.

#### PART 1.

The tremendously rapid growth of the automobile industry of the United States has had one consequence which could not be avoided. Whenever a thing grows too fast the growth is not orderly. The law of order prevails throughout all nature, and cannot be defied. While we are learning that, taken as a whole, American business methods are very slipshod, as compared with those of the leading European countries, that we are a reckless, extravagant people, rushing along, pell-mell, regardless of consequences, the disorderly conduct of certain businesses stands out prominently.

Among these is the operation of the average garage. When a form of business is booming, there are attracted to it a large number of people, who engage in it without any definite planning as to their methods of management. As a result, the garage business has come into existence without definite form as to program or policy. The steadying influence of na-

tional associations, now making itself felt in all trades, is operating in this business, however, and the better element of garage owners realize the need for more system,



Carl H. Fast.

for better methods, for more conservative policies.

To systematize a business we must first analyze it. Broadly defined, there are only two kinds of businesses, productive and distributive. The manufacturer or mechanical establishment, or farmer, is a producer, the jobber or retailer or mail-order house is a distributor. In other words, the processes of any business can be reduced to two classes in their nature. One deals with the handling of goods or commodities, and its problems or systems are those of merchandising, of the buying and selling of commodities. The other deals with labor, as its chief object, utilizing materials and facilities for rendering service, as in the case of the garage. A garage, therefore, is a combination of the two, a mechanical service business and a retailing business, and any attempt to systematize it must begin by separating these two processes, or departments, as to costs, income, etc. The garage owner, as a retailer, derives revenue and profit from various sources, such as the sale of gasoline, oil, grease, tires, accessories, parts, etc., from service rendered, such as the storage of cars, washing, etc., and from mechanical work, such as repairing and replacements. To systematize a garage, we must therefore provide a method for con-

trolling its merchandising or retailing operations and a system for controlling its mechanical processes or service activities.

#### The Retailing Side.

Taking two subjects in order, we will first consider how a typical garage can improve its retailing efficiency. This means that its available capital or credit, as used in carrying stock or merchandise, must turn as actively as possible, with a satisfactory profit on each turn.

In a retail store, where wide assortments of merchandise are expected by the public, this is a very serious problem and one of the chief causes of the high business mortality among retailers is their inability to control their merchandise outlay. All of the profits made by the business go "up on the shelf," so to speak. In other words, the profits earned are all required to pay for the merchandise which is being bought. Since all of the sales are at a marked-up price, this usually means that the buying of new merchandise goes on faster than the selling. The consequence is that a very large part of the average retailer's stock remains in his possession or on his shelves for very long periods of time, inactive, constantly depreciating and earning no revenue.

To quicken the turnover, therefore, of its merchandise and capital, causing every dollar of merchandise bought to be sold as soon as possible after its purchase, shows the highest skill in retailing, provided that the goods are sold at a satisfactory profit. Any good retailing system must help the dealer to keep track of his stock inventory at all times and it should guard against the purchase of goods, either through quantity or kind, that will not sell readily.

The next requisite in a retailing system is that the dealer shall not deceive himself in his pricing of his goods for sale. It is a notorious fact that the vast majority of retailers have not yet learned the first basic principle of profit figuring. Everybody with a grain of common sense knows that the cost of doing business, or the operating expense, in all lines has increased enormously in recent years. The average expense of retailing twenty years ago was about 15 or 16 per cent of the sales volume; today it averages from 26 to 30 per cent.

Thousands of retailers still imagine that they are making a profit in pricing their goods for sale, when as a matter of fact they are selling at a loss. This is due

to a stupid error in the method of figuring profit-percentages. Our school books taught us (and unfortunately the commercial courses still teach us) to figure profit as an added percentage of the cost in any transaction. In other words, that adding 30 cents to an article which costs \$1 will show a 30 per cent profit. This would be true if it were a speculative transaction and required no *service* to be rendered. The broker who buys ten thousand bushels of grain at \$1 a bushel and sells it for \$1.30 makes a 30 per cent profit, less the nominal expenses of the transaction. He is merely a speculator in commodities. But the retailer who must carry goods in stock, must display them attractively and intelligently, must advertise, must keep a comfortable store, must have salespersons available to wait on customers, must show goods without making sales, is more than a speculator in commodities and his *expense*, the cost of rendering the retailing *service* which he gives, is the big problem of his operation, and the big factor in his pricing. To him the cost of an article is not merely what it costs to buy, but what it costs to *sell*.

In measuring the operating expenses of a retail store, it is only possible to compare them with its sales. Thus, when we hear that it costs a certain store 21 per cent to do business, this means that its operating expenses in a year will equal 21 per cent of its sales. Knowing this fact and wishing to make sale-profits sufficient to cover expenses and leave a net profit, it is clear that in the pricing of the different articles we must measure the profit margin, not as a percentage added to the cost, but as a *percentage of the selling price*. To measure profits as a percentage of the cost of merchandise bought, while measuring expenses as a percentage of sales, makes it impossible to compare the two and insure safety. One might as well figure his purchases in the pounds, shillings and pence of English currency and his sales in dollars and cents, without reducing them to a common exchange basis. No intelligent knowledge or management is possible under such a method, and, fortunately, the retail field is learning rapidly to correct this error.

The garage owner, as a retailer, should therefore, figure his profit percentages as a percentage of the sale price of the various articles he sells, should carry as attractive and convenient an assortment of stock as possible, and should avoid carrying goods which do not move with reasonable speed. This is not so difficult with a garage as with a store, because a very large portion of the sales of a garage can be of articles which can be purchased on special order, from the manufacturer, and do not require being carried in stock.

The further necessity, as a retailer, of judicious advertising, of standing back of his goods and of keeping such accurate inventory records as to avoid shrinkage, debt and loss, must be obvious.

### The Mechanical Side.

As a mechanical business, the garage, in making repairs and replacements, as well as in rendering storage, washing and service, must be treated as a productive business with a sound system installed for controlling its expenses or costs of doing business. This means that the *direct labor* of each job, the actual *materials* used and



The Simplified Accounting Outfit.

the general or *overhead* expense should be watched, so that in the prices charged for work done there may be a satisfactory profit, as well as an amount which will cover all outlay. This means installing a cost system.

Now, cost systems are generally known to be very elaborate affairs, requiring a pretty high degree of intelligence and clerical skill to carry them on. In the case of the average garage this is a severe handicap, for obvious reasons. To keep a bookkeeper constantly in the office would mean a heavy item of expense, while, on the other hand, to expect the machinist or garage laborer, who might be temporarily in charge and alone, to make handwritten double-entries or to keep any form of accounts, is quite out of the question. For these reasons there are few garages that have any idea of their costs.

Between the dual nature of his business, as both a retailer and mechanical proprietor and the complicated nature of prevailing bookkeeping systems, the average garage owner has only a hazy notion of what profits, if any, he is making in different lines. It shall be the aim of these articles to describe two systems and the devices by which they can be successfully operated, *entirely without any knowledge of books or bookkeeping*, so as to provide both the skillful control of the retail end and the orderly management of the mechanical end, in any typical garage.

Editor's Note.—In the next two articles Mr. Fast will describe the systems here referred to, beginning with the retail system, which will appear in our next issue. In the illustrations which will be given, the readers will be surprised to see that there will be no ledgers, journals or the customary books of account which hitherto have complicated the system.

(Continued from page 27.)

In recent surveying work in the Northwest by the Coast and Geodetic Survey, automobile trucks were used for the first time. They proved so successful that all other surveying parties will use trucks. The route covered by the trucks in this work extended 630 miles from northern Utah northwestward to the Columbia River in northeastern Oregon, thence westward down the Columbia River to Portland, Oregon. In spite of the rugged country, there were no accidents. The motor trucks carried the party and outfit to the base of the peaks on which observations were made. The camp equipment and instruments were carried from the truck to the top of the peak by horses or by members of the party.

The Fosberg Garage at the foot of Ninth street, S. W., was recently damaged by fire, with a loss of \$400. Three automobiles were damaged.

A conspicuous example of what happens to county roads when a city, the center of heavy automobile traffic, fails to contribute toward the building and maintenance of country roads, is found in Spotsylvania County, Virginia, according to specialists in road economics of the United States Department of Agriculture.

The country districts of Spotsylvania County some years ago issued \$170,000 of 4½ and 5 per cent bonds to improve their county roads. Under the Virginia law, the cities of the state are not taxed for county purposes, although they may aid in the improvement of roads for a distance of ten miles from the city limits if the city council so elects. The city of Fredericksburg, in Spotsylvania County, however, contributed no part to the financial burden of maintaining the county roads. The heavy automobile traffic emanating from that point has proved to be a very destructive element to the county road system, and it was found that rapid deterioration was taking place in the county roads, and insufficient funds existed with which to meet the situation. The county authorities, accordingly, established toll gates on the principal roads and sufficient revenue thus was derived not only to maintain the roads but actually to extend their construction a short distance. This reversion to a system long since abolished by most countries was partially due at least to the fact that the city in this county had contributed nothing to the upkeep of the roads which residents of that city use extensively for automobiles.

The writers of the report suggest, in view of the very rapid development of motor vehicles in the past decade and the prospects of much more widespread use of this means of transportation in the future, the desirability of making provisions so that the cities may aid in the construction and maintenance of roads in the surrounding territory.

### Iowa Garagemen and Dealers Meet.

The Iowa Automobile Trade Association held at two-days convention at Des Moines December 8 and 9. It was attended by garagemen and auto dealers from widely separated parts of the state. The meeting was enthusiastic and, considering the small attendance in other states this year, on similar occasions, the convention may be accounted a success.

President J. A. Holsman of Des Moines presided and Field Secretary Samuel L. Seeman was chief master of ceremonies, to whose untiring activities the present membership of the association and the attendance at the convention was largely due. A constructive educational program was carried through, followed by a banquet. Secretary Carr of the A. A. G. O. was present and outlined the work of the national organization at one of the sessions, and it met with the hearty approval of the gathering. He spoke at the convention banquet, also at the banquet of the Automobile Section of the Des Moines Chamber of Commerce the next evening.

Lien legislation for the State of Iowa is being planned by both the I. A. T. A. and the Chamber Section. A mechanics' license law met with approval.

Mr. Carr found a division in the organization forces of the state, and a convention of the Iowa Retail Automobile Dealers' Association is scheduled for Ft. Dodge, January 9 and 10. He met C. C. Nye, its secretary, at the Chamber banquet, where the latter spoke on the work of that organization. This situation is regrettable and the A. A. G. O. officers and workers intend to do their utmost to promote unity and harmony in the Iowa field.

In company with Mr. Seeman the A. A. G. O. Secretary paid his respects to Governor Clarke and Insurance Commissioner English at the State House, having a very satisfactory interview with the latter in reference to the Iowa insurance laws and the Insurance Department of the A. A. G. O.

The Automobile Section of the Des Moines Chamber of Commerce has been raised to the dignity of a Bureau and it will spend \$4,000 in a campaign of advertising designed to educate the public to pay list prices for cars, accessories and service as such prices alone mean standardized values.

### Legislative Action in Wisconsin and New Mexico.

The most strenuous efforts possible to improve the lien laws of Wisconsin and to secure the adoption of the model lien law in New Mexico will be made by the trade in those states this winter. The assistance of the A. A. G. O. has been sought and will be given.

Wisconsin garagemen and others interested should communicate with Secretary

Stanley Eigel, 11 First av., Milwaukee, who are willing to help, and the trade throughout the state of New Mexico who are willing to put their shoulders to the wheel in this behalf should communicate with William Whalen, East Las Vegas, N. M.

#### The New Jersey Lien Law.

Section 1. Be it enacted by the Senate and General Assembly of the State of New Jersey: All persons or corporations engaged in the business of keeping a garage or place for the storage, maintenance, keeping or repair of motor vehicles and in connection therewith stores, maintains, keeps or repairs any motor vehicle or furnishes gasoline, accessories or other supplies therefor at the request or with the consent of the owner or his representative, whether such owner be a conditional vendee or a mortgagor remaining in possession or otherwise, has a lien upon such motor vehicle or any part thereof for the sum due for such storing, maintaining, keeping or repairing of such motor vehicle or for furnishing gasoline, accessories or other supplies therefor, and may without process of law detain such motor vehicle at any time it is lawfully in his possession until such sum is paid.

Section 2. Any person or corporation acquiring a lien under the provision of section one of this act shall not lose such lien by reason of allowing the motor vehicle or part or parts of the motor vehicle to be removed from the control of the person or corporation having such a lien, and in case a motor vehicle or part or parts are so removed the person or corporation having such lien may, without further process of law, seize the motor vehicle or part or parts thereof whenever the same is or are found within the state of New Jersey.

Section 3. All such property so held by any garage keeper or automobile repair man shall, after the expiration of thirty days from the date of such detention, be sold at public auction, upon notice of said sale being first published for the space of two weeks in some newspaper circulating in the city, town, township, borough or other municipality in which said garage keeper or automobile repair shop is situated, also after five days' notice of said sale set up in five of the most public places in said city or township, and the proceeds of said sale shall be applied to the payment of said lien and the expenses of such sale; and the balance, if any remaining, shall be paid to the owner of such property or his representatives; and if said balance is not claimed by said owner within sixty days of said sale, then the balance to be paid over to the overseer of the poor of the said city or township for the support of the poor.

Section 4. This act shall take effect immediately.

#### Full Prices Best for All.

O. R. McDonald, manager accessory sales, Herring Motor Company, Des Moines, Iowa, is a strong advocate of full

prices in the garage and auto accessory stores. In a recent issue of the Sunday Des Moines Register, his views are clearly set forth in a two column article depicting how cut-throat competition is not only bad for dealers but worse for the consumers. While this principle applies generally, it applies with special force, according to Mr. McDonald, to the automobile and accessory field.

The garageman and accessory dealer are experts. They know what's what when it comes to efficient goods and service, and neither can be purchased by a consumer without paying what it is worth. When it comes to a question of price any garageman or dealer can meet a low figure, but it must always be at the sacrifice of real values and real service. This can be covered up to the customer, but it is a fact nevertheless, and the best type of garageman and dealer does not relish being forced to adopt such competitive tactics.

### A Dealer's License Number Abuse.

Automobile dealers and garagemen at Waterloo and Ft. Dodge have inaugurated a campaign to put on the statute books of the Hawkeye state a law prohibiting the use of dealers' license numbers by private owners of cars. Driving cars on auto dealers' numbers is a much abused privilege which our Waterloo and Ft. Dodge friends believe should be stopped, as accidents which occur are often credited to dealers and garagemen, and damages are assessed against them because the license numbers are theirs and not the parties responsible for the accident.

### A Clearing House for Used Cars.

The attention of the members of the American Association of Garage Owners and readers of this journal is drawn to the work cut out for itself by the Automobile Clearing House, Inc., 622 Railway Exchange Bldg., Chicago.

Dealing in used cars is an unsatisfactory business when a garageman or dealer is required to pick up his cars and dispose of them as occasion offers. Through the Automobile Clearing House just the car needed to fit a particular requirement can generally be had and a quick turn-over made at a profit to the dealer. It is a cash transaction all the way through and the profit is close up to one hundred per cent net.

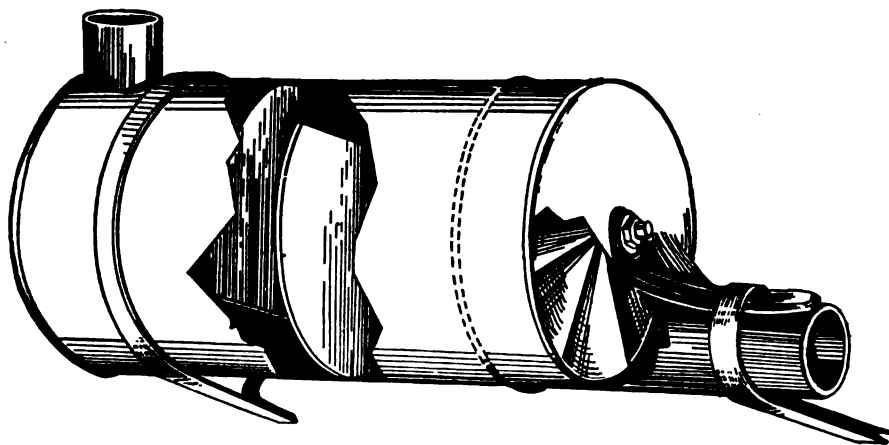
Many garagemen and auto dealers find that they can sell used cars at a used car price when they can't sell a new car at a new car price. By being connected with the Automobile Clearing House, this business can be taken on and the volume of sales largely increased without a dollar's additional capital invested.

The concern mentioned is well financed and we would suggest that members and readers who desire an agency of this character communicate at once with them.

# Auto Accessories *and* Garage Equipment

## Fan Muffler.

Cook Muffler Co., 110 South Dearborn street, Chicago, have proved in the case of over 200 different firms that the Fan Muffler earns more than 100 per cent per annum on its cost in the saving of gasoline alone. And that's a rather tidy saving in these days of the h. c. of l.



The Cook Fan Muffler.

Then, the Bissell Laundry Co., for instance, while figuring 12 per cent saving in gasoline, believes the main value of the Fan Muffler in the quick starting of their machines; this firm has ten of its machines fitted with the Fan Muffler. Mr. Cook, himself, while coyly admitting he has the best accessory on the market, finds its main value is in eliminating carbon. Fitted with the Fan Muffler, he has driven his Paige machine 11,600 miles without renewing a single spark plug or grinding a valve. The North Side Cleaners & Dyers bought a Fan Muffler for a test and found a gallon of gasoline furnished power for a run of 18½ miles for one of its Ford trucks, while a gallon of the same gasoline was used up in a 9.4 mile run without the muffler. The next day its fleet of eight trucks was equipped with a Fan mufflers each. So it was with the Lakeside Cleaners & Dyers, with the Paris Laundry Co., with the Lincoln Hand Laundry, with Edgewater Laundry Co., with South Side Linen Co., with Mandel Bros., with Chicago Telephone Co., with Chicago Consolidated Bottling Co., and with nearly 200 other Chicago firms.

But all this isn't what the Fan muffler started to do. It was originated as a silencer and it fills the bill. Attached to an exhaust, the sleep-shattering staccato of a machine becomes the soft purring of the fireside mouser. So far as the "cut-out" is concerned, "there hain't no sich animile." There isn't even the familiar "chou-chou." There is no back-pressure as the fan in the muffler runs after the motor stops, thus clearing out

the carbon and dead gases. But besides being a silencer, 200 Chicago firms find from their own experiments that it saves an average of 15 per cent in the gasoline bill; that it lets the cars start enough quicker to alone pay the cost and that it pays for itself in saving of time and cost in putting in new spark plugs.

Frank B. Cook, who is known by telephone men throughout the world as an inventor and manufacturer, is now backing the company to any extent necessary.

## Mittens Becoming Popular.

Morrison-Ricker Mfg. Co., Grinnell, Iowa, find the demand for their automo-



Morrison-Ricker Mittens.

bile mittens is increasing faster than that for any other of their products. The reason is that gauntlet gloves have become standard, the Morrison-Ricker Company finding it keeps pace accurately with the increased use of automobiles.

But more and more are automobile owners using their cars for touring in cold weather. In really cold weather, no glove can keep the hands comfortably warm, no matter how thickly made or lined. When the hands grip the wheel tightly the circulation is partially cut off and if the fingers are separated they soon become very cold. No matter if

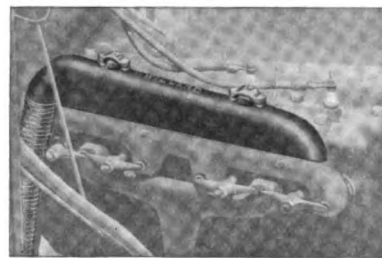
they are encased in fur or any other warm material it is possible to soon freeze them in severe weather if a long drive is attempted. But in a mitten it is different as the fingers are together and each radiates warmth to the other and keeps the hand warm.

In speaking further about various linings used in gloves a member of the firm said he believed he had hit upon the practical lining for an automobile glove in a detachable knit lining. "We make a full line of both gloves and mittens with a seamless camel's hair knit lining which may be removed and washed or dried out which always insures a warm, soft lining. Then, too, this lining gives more protection to the wrist than the regular lining which is sewed in. Short gloves are becoming immensely popular with motorists for summer driving especially in the ventilated styles but I do not believe that anything will ever take the place of the gauntlet and its protecting cuff for winter use."

## The Willard Superheater.

The Willard Company, South Bend, Ind., has solved a chief gasoline problem in providing means for its practically perfect combustion in gas engines. It has been found in practice that present-day gasoline is so heavy that a carburetor atomizes but does not vaporize it. For perfect combustion, gasoline must be vaporized. Willard Superheater is the means to bring this about.

The Superheater is a simple device, retailing at \$5, and can be installed on any Ford car in five minutes with the aid of a screwdriver and wrench. It utilizes the heat from the exhaust to superheat the air drawn into the carburetor, thus insuring the vaporization of the gasoline and its complete explosion or combustion. This gives a sharper and more powerful explosion, delivering added power to the crank-shaft and giving more miles to the gallon of gasoline. An added feature is that these explosions practically eliminate carbon deposits. The most of the carbon



Willard Superheater.

is burned and all loose carbon particles are blown from the combustion chamber by the power of the explosions.

### No Man Top.

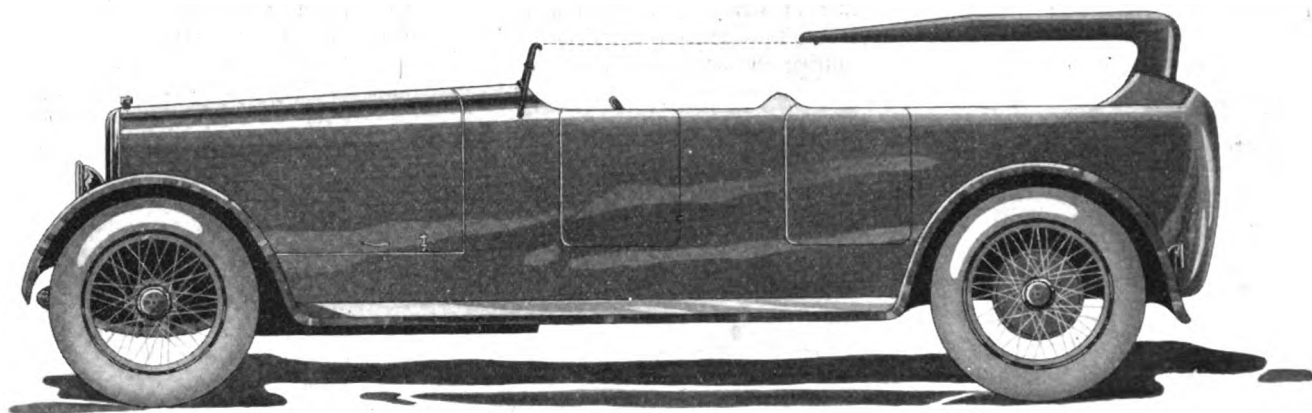
The one man top, which many times did not live up to its name and gave innumerable and original cartoonists an opportunity to draw a picture of one male motorist and five female helpers attempting to raise it in a driving rainstorm, has a dangerous

saved, considering the exasperation and amount of time and energy expended in trying to accomplish the seemingly impossible thing of "putting her over."

Of the many contrivances manufactured to make winter driving enjoyable, the Gas Generator of the Sandbo Starter Co. of

### Ambu—An Automatic Electric Trouble Finder.

Twelve thousand five hundred troubles are possible in the fifty or more types of electric starting and lighting systems. With this particular type of trouble, it has been the universal experience of garage men



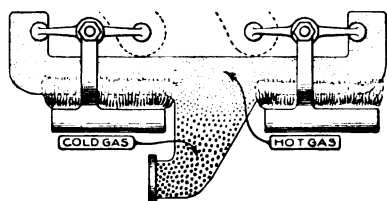
### NO MAN TOP.

rival in the No Man Top, raised and lowered mechanically and adopted as standard equipment on the 1917 Marmon. This top, which is the accessory innovation of the year, is raised or lowered by power derived from the motor of the car. It is controlled by the driver in the seat, who need not stop the car to operate it. When the top is not in use it is wound around a roller and carried in a dustproof compartment at the rear of the machine.

The illustration shows the No Man Top as it appears when it is being raised or lowered. It can be done without stopping the car, without physical exertion, without soiling your clothes and without losing your temper. It is automatic, instantaneous and disappearing. It is being manufactured and marketed by Automatic Auto Top Company, Suite 800, Number 20, E. Jackson Boulevard, Chicago.

### The Cold Motor Nemesis.

The multitude of Ford owners whose motors are not equipped with the latest



Sandbo Gas Generator.

devices for eliminating poor starts on cold winter mornings, find their "pet peeve" to be that of cranking a cold motor.

Plenty of good muscle may be developed by this exercise but no time or money

Rock Island, Ill., is simple and effective—can be permanently attached in five minutes and solves the problem of a balky motor on cold winter mornings. The Sandbo Gas Generator is a manifold heater and naturally the contact of the cold gas coming from the carburetor into a heated manifold vaporizes the gas and makes instant ignition possible. This device creates for you the "ready to start" motor and does away with all makeshifts, such as hot water, etc., often used to "thaw out" the cold motor.

Another thing. This particular generator saves at least 10c a gallon on gasoline, because it enables you to use a cheaper grade, whereas a Ford not equipped with this device must needs use high test gasoline for an easier start.

It appears to have the earmarks of the Ford owners' salvation for winter starting and is priced at \$1.50.

### Universal Mist.

Elfring & Elfring, Bensenville, Ill., are finding a ready market for Universal Mist. The compound is described as a varnish food, restoring the original lustre to all varnished surfaces. It is used generally for cleaning and polishing automobiles, but works equally well on furniture, leather, linoleum or any varnished surface.

Universal Mist is applied by means of a spray pump, acting exactly as does an atomizer in spraying perfume. The Mist is then rubbed off and the surface dried with cheesecloth, leaving a lustrous polish. Small scratches, blotches and stains are removed. The Mist fills the holes in the varnish, the surface being as smooth as

when freshly varnished. No sediment or gummy finish is left.

Universal Mist retails at 50c in pint cans or \$3 in gallon cans. A spray pump and quart can retail at \$1.25.

that more time is spent in locating the trouble than in repairing it. Accordingly, the efforts of engineers in the field of automobile electricity have largely been directed toward the invention of some mechanical means that will certainly and easily locate the trouble.

The Ambu Trouble Shooter is the product of experiments and research conducted by the Automobile Department of the American Bureau of Engineering, 1018 Wabash Avenue, Chicago. Of this instrument, which has to date had a very large sale among the progressive garage owners of the country, it is asserted by its manufacturers that it will accurately, automatically, instantly locate any of the approximately 250 places in each starting and lighting system in which trouble may occur. The most important feature of the Ambu Trouble Shooter is that it will do all this even when used by a person without particular knowledge of electrical matters. In fact, Ambu was particularly designed for the garage man that had had no special training in electricity.

Ambu not only locates the trouble, but when it is discovered, refers the user to a certain index list and wiring chart, in which the cause of the trouble and the means of repairing it are simply and accurately told. And the device is so designed that a mechanic in using it is automatically forced to deal with the trouble in a systematic manner.

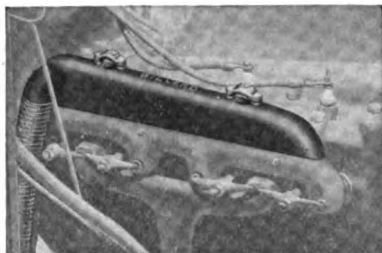
(Continued on page 6.)





## The High Price of Gasoline Makes The WILLARD SUPERHEATER a Necessity

Seven Miles More  
to a gallon of gas  
with the Willard on  
a Ford.



Intensely Practical.  
Can be attached in  
ten minutes. Out-  
lasts an automobile.

### GOOD IN ANY WEATHER — INDISPENSABLE IN COLD WEATHER

Through the introduction of superheated air into the standard Ford carburetor, by the WILLARD SUPERHEATER, the gasoline is completely vaporized, securing the full efficiency from the gas and requiring less amount per charge; consequently more mileage per gallon.

Car owners are seeking every opportunity to reduce their gasoline consumption. The Willard Superheater is their biggest opportunity. It will pay for itself in 60 days. Inexpensive, practical, can be attached in a few minutes without the necessity of drilling a hole or cutting engine in any way, and will outlast their car.

Every car owner is interested—Every car owner a live prospect.

Ask our Sales Department about  
our Agency proposition—open terri-  
tory, etc.

Retail Price, \$5.00

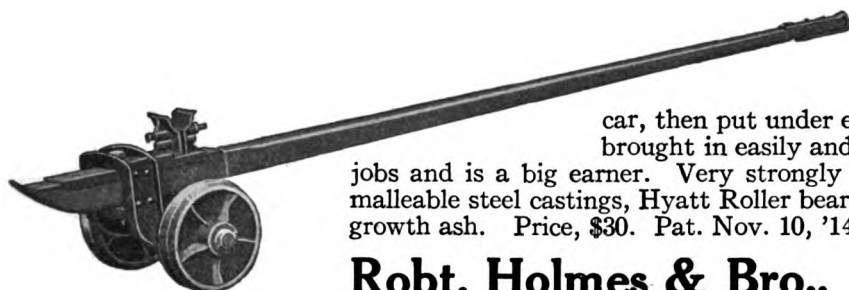
Do this today — Add to your stock  
of supplies, accessories, etc., a real  
necessity.

**WILLARD COMPANY**

**SOUTH BEND**

**INDIANA**

## Hundreds of Garagemen Use the Holmes Wrecking Truck



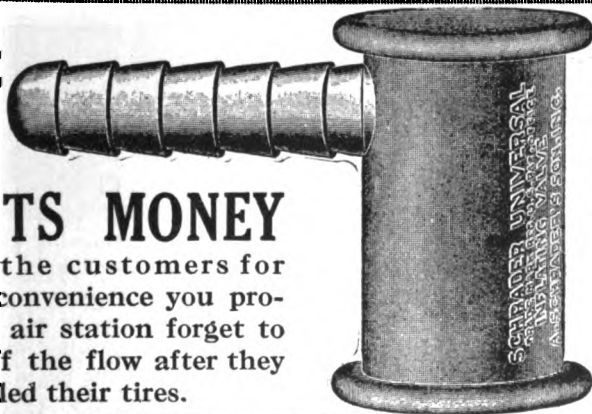
It is just what they need for bringing in wrecked cars. The truck is used as lever to raise the car, then put under either axle and any size car can be brought in easily and quickly. Brings lots of profitable jobs and is a big earner. Very strongly made, having frame and wheels of malleable steel castings, Hyatt Roller bearings for wheels, and tongue of second growth ash. Price, \$30. Pat. Nov. 10, '14. Discounts to dealers and garages.

**Robt. Holmes & Bro., - Danville, Ill.**

**FREE  
AIR**

**COSTS MONEY**

when the customers for  
whose convenience you pro-  
vide an air station forget to  
turn off the flow after they  
have filled their tires.



Guard against this waste by attaching a

**Schrader Automatic Inflating Valve**  
to your air hose.

Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve. Made to fit any diameter of hose from 1-4 in. to 5-8 in.

**PRICE ONE DOLLAR**

Manufactured by

**A. SCHRADER'S SON, Inc.**

783-793 Atlantic Ave., Brooklyn, N. Y.

Schrader products were awarded a Grand Prize and two Gold Medals at the Panama-Pacific International Exposition. "There's a reason."

Patronize our advertisers and build up your Association and Journal

(Continued from page 44.)

The charts, wiring diagrams, periodic bulletins, and the instrument itself are contained in a specially constructed metal box provided with lock and key. From the precision instrument with its glass covered dial extend two heavy wire cables with a special design of universal terminal. At each side are two levers, which adjust Ambu for the particular car being repaired. One of the large Ambu cables is attached to one of the disconnected battery cables; the other to the battery terminal.

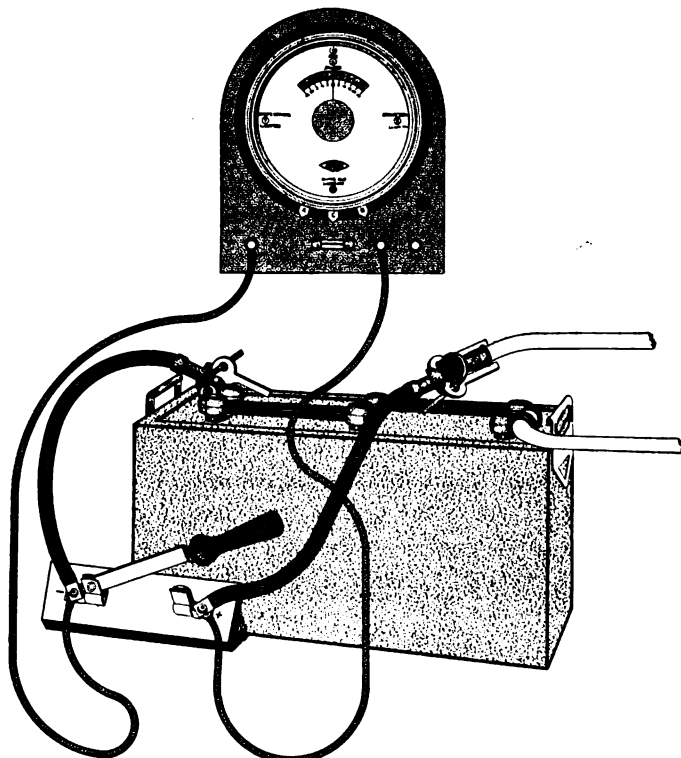
The alphabetical list of cars next supplies the key numbers of the particular car. Assume, for instance, the key numbers are 4 and 5. Then one of the adjusting

the American Bureau of Engineering furnishes each Ambu user with all the data relating to any new developments in the electrical engineering field for one year without charge.

The Ambu space at the New York Automobile Show is 169, where Ambu will be shown actually locating trouble. The Chicago Show Ambu space is 31, while a special exhibit will be held at the home office, 1018 Wabash Avenue.

### Makes a Ford Look Like \$1,000.

The Standard Thermometer Company of Boston, Mass., informs the trade that its Standard Speedometer makes the Ford



Ambu—The Trouble Finder.

levers is moved until the figure 4 appears on the dial, the other until 5 appears.

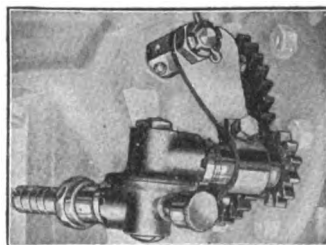
With the lamps turned off and the engine idle, a number appears in the lower opening in the dial. This corresponds to a chart number, in which will be found an explanation of the present trouble together with definite instructions for remedying it. If an "N" appears in the space, it indicates that the part of the system tested is normal and the examination continues.

As the lamps then are turned on, with the engine still idle, another section of the dial indicates the normality or need of repair in this part of the circuit. The last test is to turn off the lamps and start the engine, trouble being indicated in the same manner as before.

These three tests have thus taken into account every part of the electrical equipment, and tested both charge and discharge conditions, something not possible by any other means.

In addition, the service department of

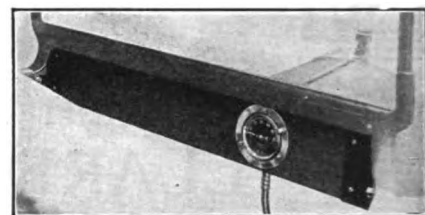
look like \$1,000. Many Ford owners are quoted to the same effect. The speedometer, mounted on Standard instrument board, can be mounted on any Ford cowl within twenty minutes, by the removal of two nuts. The combination then looks like this:



Speedometer Mechanism.

The speedometer has a 4 1/4-inch nickel-plated flange, black bezel ring and silver or black dial. Has 10,000-mile odometer and 100-mile trip with quick reset. It is from every standpoint the highest grade instrument designed for Ford cars. Two

outfits are furnished of this type. Model F330 has the above instrument board and



Standard Speedometer.

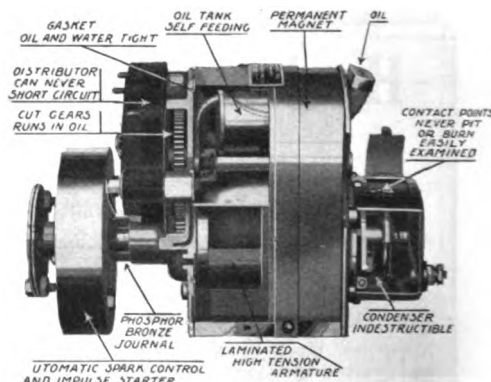
speedometer with drive F320 as originally designed by the Ford Motor Co. This retails universally for \$14. Model R355 consists of the same speedometer and board and is equipped with the ball-bearing swivel joint, illustrated below.

This model is necessary when shock absorbers are used on front springs, is guaranteed against defect for one year and retails for \$15.

They also have an instrument board installation for Ford Coupelet and a special instrument board installation for Ford Sedan. They are distributed and guaranteed by fifty sales and service stations whose address will be furnished upon request.

### Sevison High Tension Magneto.

Sevison Electric Company, Elkhart, Indiana, is fast increasing its business through contracts with automobile man-



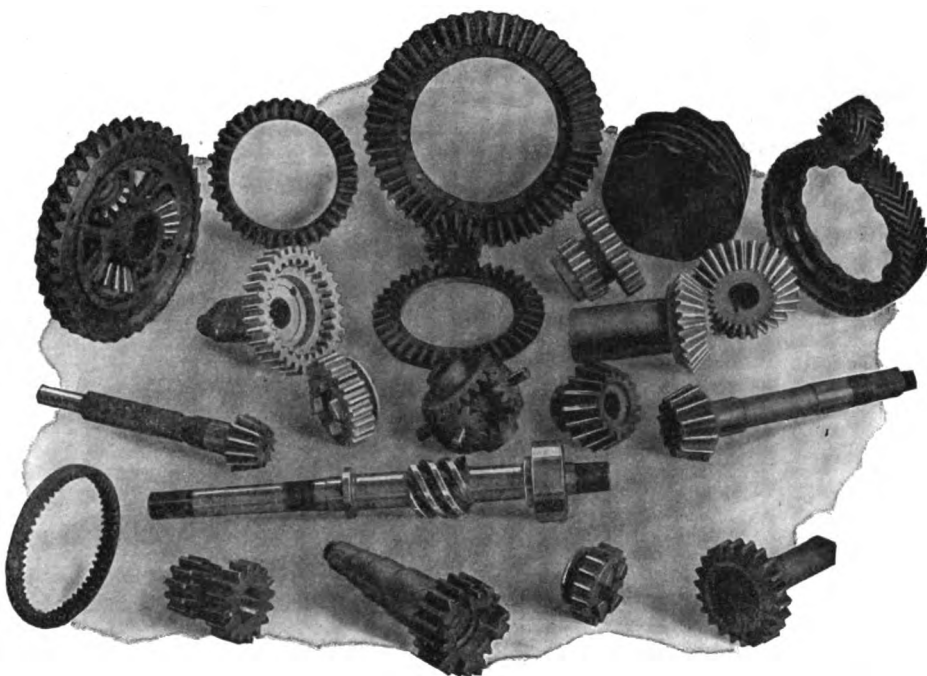
ufacturers. Its automatic high tension magneto has been tested in many of the factories with a showing of increased horse power from the motors with a less consumption of fuel.

The Sevison claims on the magneto are based on the hot flame spark, this especially being effective at slow speed. The distributor is made of condensite, with no coil springs, carbon brushes or wearing parts and can never short circuit. The circuit breaker can be adjusted without removing any part of the magneto; the condenser eliminates all arcing at contact points; the automatic governor advances or retards the spark automatically, requiring no attention nor adjustments and the impulse starter, also automatic, produces a very hot arc flame spark at the firing point of the motor with two impulses to one revolution of the armature.

# WILLIAM GANSCHOW COMPANY

## GEARS for Automobiles Our Specialty

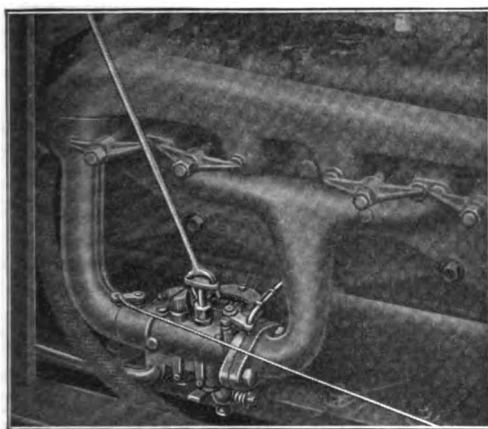
**Y**OU DO NOT HAVE TO LAY UP YOUR CAR and send to the manufacturers for repair parts or replace gears, as we are prepared to furnish promptly transmission, differential or timing gears, and any other part made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or Foreign manufacture. Workmanship and quality guaranteed.



WASHINGTON BLVD. AND MORGAN STREET - CHICAGO, ILLINOIS

## Model N Marvel Carburetor

Designed especially for Ford Cars.  
Fits right in place of regular installation, no changes whatsoever.

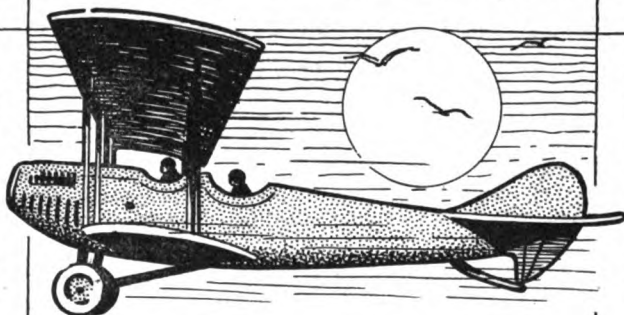


Model E Marvel Carburetors are standard on Buick, Olds, and Oakland

Model E Marvel Carburetors greatly improve Overland and Studebaker cars. Catalog on application.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retail for \$8.00 complete.

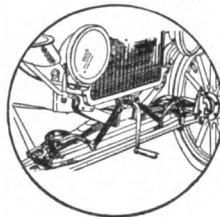
**MARVEL CARBURETOR COMPANY**  
FLINT, MICHIGAN, U. S. A.



LIKE RIDING IN AIR!

# W&C

**ORIGINAL DOUBLE ARM  
SHOCK ABSORBERS**



That's the feeling and sensation.

W. & C. Shock Absorbers are a source of profitable winter business. Show your customers how these "Shock Absorbers" take the jar out of riding.

Write or Wire for Dealer's Proposition

**Phillip H. Webber & Co.**  
Hoopeston, Illinois

## Pennsylvania Brothers, Take Notice!

Work for a lien law for the old Keystone State by picking out your representative and senator and writing them that you are entitled to their support for this just and needed price legislation.

Following is the membership of the 1917 General Assembly, which meets in Harrisburg January 10:

### Senate.

Baldwin, Frank E., Austin, Potter County.  
Beales, C. William, Gettysburg, Adams County.  
Beldleman, Edward E., Harrisburg, Dauphin County.  
Buckman, Clarence J., Langhorne, Bucks County.  
Burke, William J., 1213 Resaca Street, Pittsburgh, N. S., Allegheny County.  
Catlin, Sterling R., Wilkes-Barre, Luzerne County.  
Craig, William David, Allquippa, Beaver County.  
Croft, Frank P., Merion, Montgomery County.  
Crow, William E., Uniontown, Fayette County.  
Daix, Augustus F., Jr., 1613 North Thirty-third Street, Philadelphia.  
DeWitt, Asa K., Plymouth, Luzerne County.  
Endsley, James W., Somerfield, Somerset County.  
Eyre, T. Larry, West Chester, Chester County.  
Graft, J. Frank, Worthington, Armstrong County.  
Graft, Wilbur P., Blairsville, Indiana County.  
Hackett, W. Clayton, Easton, Northampton County.  
Haldeman, Horace L., Marletta, Lancaster County.  
Hindman, W. Wayne, Clarion, Clarion County.  
Homsher, John G., Strasburg, Lancaster County.  
Jenkins, Owen B., 6618 Greene Street, Philadelphia.  
Jones, Edward E., Harford, Susquehanna County.  
Kline, Charles H., 1002 Frick Building, Pittsburgh, Allegheny County.  
Leiby, Scott S., Marysville, Perry County.  
Lynch, William M., Clarks Summit, Lackawanna County.  
Magee, Charles J., 1654 Frick Annex, Pittsburgh, Allegheny County.  
Martin, David, 1939 North Sixth Street, Philadelphia.  
McConnell, William C., Shamokin, Northumberland County.  
McKee, William C., 7213 Monticello Street, Pittsburgh, Allegheny County.  
McNichol, James P., 222 North Nineteenth Street, Philadelphia.  
Miller, Summerfield J., Madera, Clearfield County.  
Nason, Miles R., Erie, Erie County.  
Patton, Edward W., The Marlyn, Fortieth and Walnut Streets, Philadelphia.  
Phelps, Marshall L., Franklin, Venango County.  
Salus, Samuel W., 614 South Eleventh Street, Philadelphia.  
Sassaman, George W., Reading, Berks County.  
Schantz, Horace W., Macungie, Lehigh County.  
Semmens, William H., Turtle Creek, Allegheny County.  
Smith, Raymond E., Guys Mills, Crawford County.  
Smith, William Wallace, 4131 North Broad Street, Philadelphia.  
Snyder, Charles A., Pottsville, Schuylkill County.

Snyder, Plymouth W., Hollidaysburg, Blair County.  
Sones, Charles W., Williamsport, Lycoming County.  
Sproul, William C., Chester, Delaware County.  
Stewart, Joseph W., Jefferson, Greene County.  
Tompkins, Horace A., Ebensburg, Cambria County.  
Vare, Edwin H., 2009 South Broad Street, Philadelphia.  
Warner, Elmer, Weatherly, Carbon County.  
Wasbers, Henry, York, York County.  
Weaver, James B., Latrobe, Westmoreland County.  
Whitten, Norman A., Munhall, Allegheny County.

### House of Representatives.

Albee, Henry T., Galetton, Potter County.  
Aron, Max, 903 North Franklin Street, Philadelphia.  
Arthur, John E., 415 West York Street, Philadelphia.  
Aston, Richard, Wilkes-Barre, Luzerne County.  
Baker, George Plummer, Washington, Washington County.  
Baldi, Charles C. A., Jr., 928 South Eighth Street, Philadelphia.  
Baldridge, Carl C., Wilkesburg, Allegheny County.  
Baldwin, Richard J., Chadds Ford, Delaware County.  
Barner, Horace C., Shippensburg, R. D. No. 1, Cumberland County.  
Bechtold, David J., Steelton, Dauphin County.  
Bell, Green W., Bells Landing, Clearfield County.  
Benchoff, Loudon Francis, Waynesboro, R. D., Franklin County.  
Bennett, Michael Smith, 5541 North Fifth Street, Philadelphia.  
Benninger, William M., Benningers, Northampton County.  
Beyer, Frederick, 3304 North Fifth Street, Philadelphia.  
Bidelspacher, Charles F., Williamsport, Lycoming County.  
Black, A., Ramsey S., Harrisburg, Dauphin County.  
Boulton, Harry, Houtzdale, Clearfield County.  
Bouton, Victor B., New Kensington, Westmoreland County.  
Bovee, June R., Erie, Erie County.  
Boyd, James S., Norristown (Garage man), Montgomery County.  
Brady, William J., 847 North Twenty-sixth Street, Philadelphia.  
Brumbaugh, H. Atlee, Roaring Spring, Blair County.  
Burnett, Eugene A., Mechanicsburg, Cumberland County.  
Campbell, James O., Butler, Butler County.  
Campbell, Theodore, 6312 Overbrook Avenue, Philadelphia.  
Canon, John W., Sandy Lake, Mercer County.  
Chestnut, Clem, Hustontown, Fulton County.  
Christman, Harvey, Linfield, Montgomery County.  
Clements, Noble, Shamokin, Northumberland County.  
Coldsmith, John B., Mount Pleasant, Westmoreland County.  
Conner, Patrick, 2807 Oxford Street, Philadelphia.  
Cook, Calvin E., Dillsburg, R. D. No. 4, York County.  
Corbin, Charles Grant, Granville, Mifflin County.  
Cox, Edwin R., 2225 Reed Street, Philadelphia.  
Crosby, Henry J., 802 South Front Street, Philadelphia.  
Cummins, John V., 904 East Cheltenham Avenue, Philadelphia.

Curry, Richard, 146 East Allen Street, Philadelphia.  
Dale, Richard T., Monessen, Westmoreland County.  
Davis, David F., Taylor, Lackawanna County.  
Davis, William, Ebensburg, Cambria County.  
Dawson, Hugh A., Scranton, Lackawanna County.  
Dean, Jacob J., New Castle, Lawrence County.  
Dell, James G., Huntingdon, Huntingdon County.  
Dewey, Charles P., Gillett, Bradford County.  
Dithrich, W. Heber, Coraopolis, Allegheny County.  
Donneley, James, Minersville, R. D., Schuylkill County.  
Drake, George Brent, Waynesburg, Greene County.  
Drinkhouse, John H., 2002 Oxford Street, Philadelphia.  
Dunn, James A., 5131 Milnor Street, Philadelphia.  
Eby, John S., Newport, Perry County.  
Ehrhardt, Frederick C., Scranton, Lackawanna County.  
Erdman, Ira T., Allentown, Lehigh County.  
Fackler, Frank, 3619 K Street, Philadelphia.  
Fitzgibbon, John A., Bradford, McKean County.  
Flynn, John M., Ridgway, Elk County.  
Fowler, Daniel, Scranton, Lackawanna County.  
Franklin, James, 5726 Thomas Avenue, Philadelphia.  
Fretz, Daniel G., Doylestown, Bucks County.  
Gans, Sigmund J., 1413 Westmoreland Street, Philadelphia.  
Geary, Thomas Paul, 3 Junilla Street, Pittsburgh, Allegheny County.  
Glass, Leopold C., 1613 South Sixth Street, Philadelphia.  
Golder, Benjamin M., 3223 Arlington Street, Philadelphia.  
Goodnough, C. Jay, Emporium, Cameron County.  
Goodwin, Daniel B., Oil City, Venango County.  
Gormley, James R., Monaca, Beaver County.  
Graham, Harry C., Phoenixville, Chester County.  
Gransback, Henry, Sr., 119 Fairmount Avenue, Philadelphia.  
Haight, John J., Cooper Tract, Forest County.  
Haldeman, Isalah T., Schwenkville, R. D. No. 1, Montgomery County.  
Hecht, Herman L., 2608 North Seventeenth Street, Philadelphia.  
Heffernan, James J., 324 North Fifty-second Street, Philadelphia.  
Helt, Daniel W., Shamokin, Northumberland County.  
Hess, Aaron B., Lancaster, Lancaster County.  
Heyburn, Harry H., Concordville, Delaware County.  
Hibshman, George, Ephrata, R. D. No. 2, Lancaster County.  
Hoffman, Michael R., Maytown, Lancaster County.  
Hollern, Frank P., Ashville, Cambria County.  
Hollingsworth, Maris M., Landenberg, Chester County.  
Horne, J. Ross, Johnstown, Cambria County.  
Horton, D. Harry, Connellsville, Fayette County.  
Hough, Edward M., 2535 Perrysville Avenue, Pittsburgh, N. S., Allegheny County.  
Howarth, William J., 39 Prospect Street, Pittsburgh, Allegheny County.  
Isherwood, Frank P., Bradford, McKean County.  
Jack, Milton S., Kittanning, Armstrong County.

(Continued on page 50.)

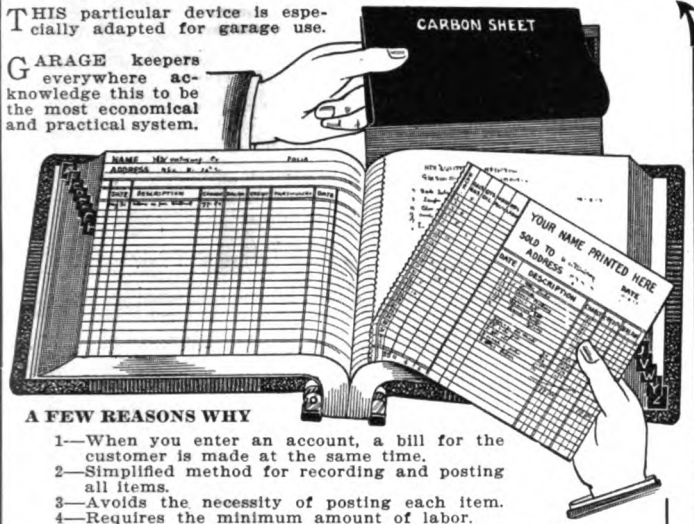


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any car



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- Jones, William W., Olyphant, Lackawanna County.
- Kennedy, Charles H., New Brighton, Beaver County.
- Lafferty, James V., 819 Spruce Street, Philadelphia.
- Lanlus, Henry E., Spring Grove, York County.
- Laucks, Samuel S., Red Lion, York County.
- Lauler, John, 351 Meyran Avenue, Pittsburgh, Allegheny County.
- Leary, Frank J., Erie, Erie County.
- Lewis, Linus M., Punxsutawney, R. D. No. 4, Jefferson County.
- Lohr, Robert W., Boswell, R. D. No. 1, Somerset County.
- Luppert, John, Williamsport, Lycoming County.
- Malle, Daniel A., 111 South Diamond Street, East Pittsburgh, Allegheny County.
- Mangan, William J., 99 South Eleventh Street, Pittsburgh, Allegheny County.
- Marvin, Frank H., Mansfield, Tioga County.
- Maurer, James H., Reading, Berks County.
- McArdle, Joseph H., 1070 North Front Street, Philadelphia.
- McCaig, William J., 3617 Butler Street, Pittsburgh, Allegheny County.
- McCollough, James M., Chicora, R. D. No. 1, Butler County.
- McCurdy, Samuel, Hollidaysburg, Blair County.
- McKay, John, Luzerne, Luzerne County.
- McKinney, John H., Franklin, Venango County.
- McNichol, Thomas F., 912 South Sixteenth Street, Philadelphia.
- McPeake, George C., Canonsburg, Washington County.
- McVicar, Nelson, Tarentum, Allegheny County.
- Mearke, William W., 5739 Center Avenue, Pittsburgh, Allegheny County.
- Mehring, John, 945 Wolf Street, Philadelphia.
- Mervine, Wade H., Stroudsburg, Monroe County.
- Michel, Charles A., 624 East North Avenue, Pittsburgh, N. S., Allegheny County.
- Miller, A., David, Mount Pleasant, Westmoreland County.
- Miller, Allan D., Susquehanna, Susquehanna County.
- Miller, Conrad G., Hazleton, Luzerne County.
- Miller, George J. A., Slatington, Lehigh County.
- Milliron, Miles A., Kittanning, Armstrong County.
- Millner, Byron A., 1703 South Thirteenth Street, Philadelphia.
- Mitchell, Lex N., Punxsutawney, Jefferson County.
- Morgan, Theodore, Sharon, Mercer County.
- Morgan, Thomas J., Nanticoke, Luzerne County.
- Murdoch, W., Crawford, Wilkesburg, Allegheny County.
- Murphy, Peter, Ashley, Luzerne County.
- Musser, Isalah D., Mifflintown, Juniata County.
- Neary, Daniel J., 2315 South Street, Philadelphia.
- Ogden, Joseph F., Tunkhannock, Wyoming County.
- Palmer, Cyrus M., Pottsville, Schuylkill County.
- Patterson, Matthew, 2424 North Mascher Street, Philadelphia.
- Perry, Samuel J., 3014 Salmon Street, Philadelphia.
- Phillips, Joseph E., Clearfield, Clearfield County.
- Pickering, Henry Y., Yardley, Bucks County.
- Powell, Richard, Edwardsville, Luzerne County.
- Ramsey, William T., Chester, Delaware County.
- Reichenbacker, Frederick C., Honesdale, Wayne County.
- Reitzel, Quintin O., Salunga, Lancaster County.
- Reynolds, John, 2724 North Twelfth Street, Philadelphia.
- Rhoads, Harry L., Gap, R. D. No. 1, Lancaster County.
- Rhodes, William Manning, Point Marion, Fayette County.
- Rich, Michael Bond, Woolrich, Clinton County.
- Richards, Andrew M., 1917 Fairmount Avenue, Philadelphia.
- Ringler, Walter A., Reading, Berks County.
- Rininger, James E., Altoona, Blair County.
- Rinn, Albert E., South Bethlehem, R. D. No. 1, Lehigh County.
- Robertson, William W., Mount Carmel, Northumberland County.
- Rogers, William H., 1225 Summer Street, Philadelphia.
- Ross, Charles, Lincoln Avenue and Wiltsie Street, Pittsburgh, Allegheny County.
- Rothenberger, Daniel A., Oley, R. D. No. 1, Berks County.
- Ruddy, Michael J., Dunmore, Lackawanna County.
- Rudisill, D. Calvin, Littlestown, R. D. No. 2, Adams County.
- Sampsel, James W., Penns Creek, Snyder County.
- Sarig, Wilson G., Temple, Berks County.
- Schaeffer, Adam C., Mahanoy City, Schuylkill County.
- Scott, Harry B., Phillipsburg, Centre County.
- Shaffer, Charles A., Berwick, Columbia County.
- Shattuck, Frederick J., Linesville, Crawford County.
- Showalter, Harry M., Lewisburg, Union County.
- Shunk, Howard P., Harbour Creek, R. D. No. 1, Erie County.
- Siggins, John, Jr., Warren, Warren County.
- Simpson, John H. W., Dravosburg, Allegheny County.
- Sinclair, Duncan, Brownsville, Fayette County.
- Smith, Edgar R., Hopewell, R. D. No. 1, Bedford County.
- Smith, Frank I., Shohola, Pike County.
- Smith, Jefferson W., 706 Green Street, Philadelphia.
- Smith, Lee, Uniontown, Fayette County.
- Smith, Oliver W., South Bethlehem, Northampton County.
- Snowden, John F., 3363 Amber Street, Philadelphia.
- Snyder, Daniel J., Greensburg, Westmoreland County.
- Somerma, Sumer, 67 Logan Street, Pittsburgh, Allegheny County.
- Sones, John E., Pottsville, Schuylkill County.
- Spangler, Robert S., York, York County.
- Spelcher, Morris W., Somerset, R. D. No. 1, Somerset County.
- Sprowls, J. Add., Donora, Washington County.
- Stadtlander, William F., 802 Frick Building, Pittsburgh, Allegheny County.
- Steedle, Joseph G., McKees Rocks, Allegheny County.
- Sterling, Philip, 2042 East York Street, Philadelphia.
- Stern, Isadore, 536 Spruce Street, Philadelphia.
- Stites, Fletcher W., Narberth, Montgomery County.
- Stofflet, Robert A., Easton, Northampton County.
- Strauss, B. Morris, Mohnton, Berks County.
- Sullivan, John C., 1628 Jancey Street, Pittsburgh, Allegheny County.
- Swartz, Joshua W., Harrisburg, Dauphin County.
- Sweltzer, Ernice M., Frogtown, Clarion County.
- Taylor, Charles E., Muncy Valley, Sullivan County.
- Thomas, David W., Wilkes-Barre, Luzerne County.
- Ulsh, Ira E., Millersburg, Dauphin County.
- Ulrich, Isaac K., Annville, Lebanon County.
- Vickerman, John W., Bellevue, Allegheny County.
- Vogdes, Russell T., West Park Station, Philadelphia.
- Wagner, William C., Mt. Oliver, Allegheny County.
- Walker, James A., 5313 Baltimore Avenue, Philadelphia.
- Wallace, Robert L., New Castle, Lawrence County.
- Walter, Charles, Chambersburg, Franklin County.
- Weimer, Asa A., Lebanon, Lebanon County.
- Wells, Edward W., 2148 South Twenty-first Street, Philadelphia.
- West, William Kase, Danville, Montour County.
- Whitaker, Samuel A., Phoenixville, Chester County.
- Wickman, Gustave A., 1004 Bellaire Avenue, Pittsburgh, Allegheny County.
- Williams, George W., Wellsboro, Tioga County.
- Williams, John P., Guys Mills, Crawford County.
- Wobensmith, James C., 512 Righter Street, Philadelphia.
- Wood, Wilmer H., Indiana, Indiana County.
- Woodward, James F., McKeesport, Allegheny County.
- Wylie, J. Ren., Wilkesburg, Allegheny County.
- Wynne, Patrick H., Pittston, Luzerne County.
- Yost, B. Jefferson, Tamaqua, Schuylkill County.
- Zanders, Harry, Mauch Chunk, Carbon County.

### Goodyear Cord Tire Record.

Five prize winners out of seven starters is the Goodyear Cord Tire record for the 250 mile Grand American race at the Chicago Speedway on October fourteenth. And the two who did not finish experienced no tire trouble, having retired from the race for other reasons.

Aitken, in his Goodyear equipped Peugeot was well in the lead near the end of the race when a broken throttle forced him to slow up and cost him first honors. Galvin, Lewis and Henderson drove the entire 250 miles without a stop. Wilcox, also on Goodyears, covered 248 miles, with only one more lap to go when engine trouble compelled him to drop out.

At Tacoma, Goodyear captured first, third, fourth and fifth with only five entries. At Cincinnati, on Labor Day, the new Speedway was dedicated with a Goodyear victory. At Sheephead Bay, on September 30, Goodyear Tires broke the world's speed record, and now at Chicago five racing drivers who pinned their faith on them have finished within the money.

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Flows with Spelter—No Wiggling  
No Waste of Spelter or Flux  
Brazes at Low Heat  
Prevents Brittleness

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**KREMBS & COMPANY**

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The  
Perfect Polish!

### UNIVERSAL MIST

The Polish with the Shine in it.

A most wonderful new polish for Autos, Furniture, etc. Nothing like it. Once used always used. Positively guaranteed not to contain any acid or other harmful ingredients.

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Speed  
**LESS** { Noise  
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Oil  
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Trouble

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# A Review of The Market

## Gasoline.

Too little storage room in Chicago, while the supply of crude was at the maximum, forced the quotation in tank wagons to 15½c recently. This is purely a local condition and the price may advance to 16½c or higher at any time the market absorbs the excess.

At other points prices are strong at 22c in New York, 23c in Boston, 22c in Philadelphia, 21c in Pittsburgh, 21c in Cleveland, 16½c Detroit, 14.2c St. Louis, 16½c Kansas City.

There is no question in the minds of producers and jobbers that these prices are at the bottom and are certain to advance.

The trade is eagerly awaiting definite action by the Bureau of Standards at Washington on a standard of quality for gasoline. Producers join with consumers in favoring the establishment of such a standard.

One of the peculiar angles of the gasoline business is shown in the 1c reduction from tank wagons in the Chicago district. It was due directly to insufficient tank room on the part of the independent companies. These companies suddenly found themselves with a tank shortage and naturally tried to force the market to absorb its surplus by a reduction in price. The Standard Oil Co., with an abundance of empty tankage, followed the reduction at once, selling at 15½c when all the producers knew they could market their entire product at 16½c or more if given time.

Export demand is cutting little figure in the prices quoted in this country, with the possible exception of the Southwest. European countries are rapidly providing substitutes for gasoline, though the American product will come back to its own when normal conditions return.

## Iron, Steel and Metals.

It is fast coming to a point where prices are ignored in the desperate struggle of manufacturers to fill their requirements for raw material. As a matter of fact, price is cutting no figure in the demands. Already it is certain there will be a real shortage during 1917 and the sources of supply will divide up on as equitable a basis as possible. New-comers in the manufacturing field must limit their demands materially and new industries which were projected for the new year have had their orders turned down flatly. They cannot get material at any price except possibly from another manufacturer acting as a jobber.

Without a quiver except to add to the chorus of clamorous buyers, Bessemer iron went up \$3 and basic iron \$4 last week. Rails for 1918 are up \$10 over the 1917 delivery price, Chicago alone absorbing 200,000 tons at the advance.

From all sources the demands are so insistent that automobile manufacturers find recent advances in prices of cars will be insufficient to cover the profit margin. They must limit their possible output or again advance prices.

The following statement of prices is compiled by a member of our staff:

	Nov. 29, 1916.	Nov. 24, 1915.
<b>Pig Iron, per gross ton:</b>		
No. 2 X, Philadelphia.....	\$27.50	\$17.75
No. 2 Valley furnace.....	30.00	16.00
No. 2 Southern, Cincinnati.....	24.40	18.40
No. 2, Birmingham, Ala.....	21.50	13.50
No. 2 furnace, Chicago.....	27.00	17.50
Basic, del'd, eastern Pa.....	27.00	17.50
Basic, Valley furnace.....	30.00	16.00
Bessemer, Pittsburgh.....	34.45	17.95
Malleable Bess., Chicago.....	27.00	17.50
Gray forge, Pittsburgh.....	29.95	16.45
L. S. charcoal, Chicago.....	28.00	17.25
<b>Rails, Billets, Etc., per gross ton:</b>		
Bess. rails, heavy, at mill.....	\$38.00	\$28.00
O.-h. rails, heavy, at mill.....	40.00	30.00
Bess. billets, Pittsburgh.....	55.00	28.00
O.-h. billets, Pittsburgh.....	55.00	29.00
O.-h. sheets bars, Pittsburgh.....	55.00	29.00
Forging billets, base, P'gh.....	80.00	50.00
O.-h. billets, Philadelphia.....	55.00	35.00
Wire rods, Pittsburgh.....	65.00	38.00
<b>Finished Iron and Steel, per lb. to large buyers:</b>		
Iron bars, Philadelphia.....	2.659	1.859
Iron bars, Pittsburgh.....	2.90	1.65
Iron bars, Chicago.....	2.65	1.60
Steel bars, Pittsburgh.....	3.00	1.70
Steel bars, New York.....	3.169	1.869
Tank plates, Pittsburgh.....	4.25	1.90
Tank plates, New York.....	4.419	2.169
Beams, etc., Pittsburgh.....	3.00	1.70
Beams, etc., New York.....	3.019	1.869
Skelp, grooved steel, P'gh.....	2.85	1.70
Skelp, sheared steel, P'gh.....	3.00	1.80
Skelp hoops, Pittsburgh.....	3.25	1.75
<b>Sheets, Nails and Wire, per lb. to large buyers:</b>		
Sheets, black, No. 28, P'gh.....	4.00	2.40
Sheets, galv., No. 28, P'gh.....	5.50	4.25
Wire nails, Pittsburgh.....	3.00	1.90
Cut nails, Pittsburgh.....	2.95	1.85
Fence wire, base, P'gh.....	2.95	1.75
Barb wire, galv., Pittsburgh.....	3.85	2.75
<b>Old Material, per gross ton:</b>		
Iron rails, Chicago.....	\$26.00	\$16.00
Iron rails, Philadelphia.....	24.00	17.50
Carwheels, Chicago.....	20.00	14.50
Carwheels, Philadelphia.....	21.50	14.00
Heavy steel scrap, P'gh.....	25.00	17.00
Heavy steel scrap, Phila.....	23.00	14.75
Heavy steel scrap, Chicago.....	23.00	15.00
No. 1 cast, Pittsburgh.....	19.50	14.00
No. 1 cast, Philadelphia.....	20.00	14.50
No. 1 cast, Ch'go (net ton).....	16.00	13.00
No. 1 RR. wrot, Phila.....	25.00	17.00
No. 1 RR. wrot, Ch'go (net).....	23.00	14.00
<b>Coke, Connellsville, per net ton at oven:</b>		
Furnace coke, prompt.....	\$ 7.00	\$ 2.10
Furnace coke, future.....	4.00	2.35
Foundry coke, prompt.....	7.50	2.75
Foundry coke, future.....	5.00	3.00
<b>Metals, per lb. to large buyers:</b>		
Lake copper, New York.....	34.00	19.87½
Electrolytic copper, N. Y.....	34.00	19.87½
Spelter, St. Louis.....	13.00	18.75
Spelter, New York.....	13.25	19.00
Lead, St. Louis.....	7.17½	5.17½
Lead, New York.....	7.25	5.25
Tin, New York.....	45.25	39.25
Antimony (Asiatic), N. Y.....	14.50	39.50
Tin plate, 100-lb. box, P'gh.....	\$6.00	\$3.40

## Motor Stocks.

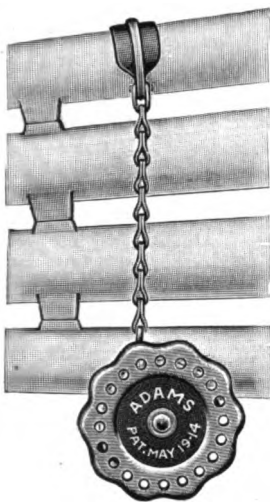
Numerous sales at higher prices characterize the stable motor stocks. Recently listed stocks have fluctuated more and their sale has decreased. The stock market is coming to class the leading motor stocks with those of railroads; a steadily growing demand for such securities as investments marking their transference to strong hands.

Name—	Par.	Bld.	Asked.
Allen Motor .....	10	...	100
American Motor Truck Co. ....	10	...	5
Bour-Davis .....	10	...	12.50
Briscoe Motor, com.....	100	...	...
Briscoe Motor, pfd.....	100	...	...
Case (J. I.) Thresh. Mach., pfd. ....	100	86	86½
Champion Auto Equipment .....	1	75	97½
Chandler Motor Co.....	100	106	106½
Chevrollet Motor Co.....	100	179	181
Coe .....	1	25	30
Cola Motor Co.....	100	...	16
Continental Motors, com.....	100	37	37½
Continental Motors, pfd.....	100	91	94
Elec. Storage Battery Co.....	100	...	67½
Emerson Motors Co., pfd.....	10	...	10
Emerson Motors Co., com.....	10	...	8
Essex Motor .....	...	...	75
Federal Air Craft & Motor Co.....	10	...	5
Federal Truck .....	10	78	...
Firestone Tire & Rubber, com.....	100	1100	...
Firestone Tire & Rubber, pfd.....	100	125	...
Fisk Rubber Co., com.....	100	125	135
Ford Motor of Canada.....	100	340	355
Fostoria Light Car, pfd.....	100	...	100
Fostoria Light Car, com.....	100	...	100
General Motors, com.....	100	800	825
General Motors, pfd.....	100	126	127
Goodyear Tire, pfd.....	100	106½	108
Grant Motor Co., com.....	10	8	9
Gray & Davis, com.....	100	...	255
Harroun .....	10	5	6
Hendee Mfg., com.....	100	31	31½
Hendee Mfg., pfd.....	100	96½	97
Hupp Motor Co., com.....	100	4½	4½
International Motor, com.....	100	...	7½
International Motor, pfd.....	100	17	20
Kelly-Springfield Tire, com.....	100	77½	80½
Kelly-Springfield Tire, 1st pfd.....	100	95	97½
Kelsey Wheel Co.....	100	54	58
Lee Tire & Rubber, com.....	100	39½	40
Locomobile Co., com.....	100	20	22½
Malbohm Motors Co.....	10	...	9
Maxwell Motors, com.....	100	75½	76
Maxwell Motors, 1st pfd.....	100	81½	82
Maxwell Motors, 2nd pfd.....	100	50	51½
Miller Rubber Co., com.....	100	275	280
Mitchell .....	...	65	67
Motor Products .....	...	60	64
National Rubber .....	...	7½	8½
New Departure Mfg., pfd.....	100	...	...
Packard Motor Car Co., com.....	100	175	180
Packard Motor Car Co., pfd.....	100	101	102½
Paige-Detroit .....	10	...	49
Peerless Truck & Motor.....	50	24	24½
Perfection Tire & Rubber .....	1	...	...
Portage Rubber Co., com.....	100	65	75
Portage Rubber Co., pfd.....	100	101	105
Princess Motor .....	1	...	1
Regal Motor, pfd.....	100	18	26
Reo Motor Car.....	10	43	44
Saxon Motor Car.....	100	79	79½
Simplex Auto Co.....	100	80	...
Scripps-Booth .....	100	56	56½
Springfield Body, pfd.....	...	133	136
Springfield Body, com.....	...	94	97
Sterling .....	10	...	15
Standard Motors .....	10	7½	7½
Stewart - Warner Speed. Corp., com.....	100	102½	104
Stewart - Warner Speed. Corp., pfd.....	100	108	110
Stromberg Carburetor.....	...	43½	44
Studebaker Corp., com.....	100	124½	124½
Stutz Motor .....	...	65	65½
Sun Motor Co.....	100	...	105
Swinehart Tire & Rubber Co.....	100	85	86
United Motors .....	10	63	63½
Universal Motors .....	5	8	8½
White Motor Co., com.....	50	54½	54½
Willis-Overland, com.....	25	37½	38
Willis-Overland, pfd.....	100	99	99½
Woods-Mobllette (New).....	1	10	11

## Adams Auto Top Holder

"STOPS THE RATTLE—SAVES YOUR TOP"

NEATEST—QUICKEST—STRONGEST



Dealers everywhere will find a ready sale for this best of all Top Holders. **An ornament to any car.** No unsightly projecting arms, nor dangling straps. Can be installed in two minutes, and operates quicker than any other.

Two sizes —  $\frac{5}{8}$ " holes for small cars.  $\frac{3}{4}$ " for large ones.

Price \$2.00 per pair

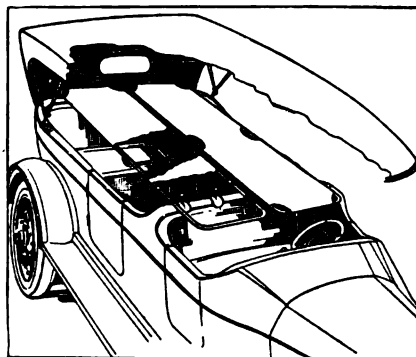
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Department C

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Each one is 6 ft. long by 2 ft. wide.

The "ANY-KAR" AUTO KOT will fit any 5 or 7 passenger car, adjusted in 1 minute to fit a Packard or Ford. Made of galvanized iron tubing, hinged in the middle and covered with 12 oz. ducking. When not in use can be folded and carried in the tonneau, out of the way. When in position the Kot lies perfectly level and is as comfortable as a bed. Weight 15 lbs.

the way. When in position the Kot lies perfectly level and is as comfortable as a bed. Weight 15 lbs.

### YOUR CUSTOMERS WILL WANT THIS

Every automobile owner who does any touring; every salesman who makes his territory in a car; campers, hunters, fishermen—any one who remains away from home over night with his automobile, can cut his traveling cost one-third and sleep comfortably in an "ANY-KAR."

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ILLINOIS

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Do you keep as careful a check on how your employees spend their valuable time as you do upon your cash? WHY NOT? Their time has a high cash value to you. A few minutes a day lost through lack of automatic supervision soon adds up into a heavy cash loss.

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Ship the cylinders for regrinding  
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# Doings in The Garage and Auto Trade

## Eastern States.

**Lackawanna Automobile Co.**, Scranton, Pa., building four-story, 90x93 ft. garage. Will have separate service and repair departments, rest-rooms, chauffeurs' club rooms, etc.

**Square Deal Garage and Auto Co.**, A. G. Beshore, manager, Reading, Pa., has taken possession of its new garage.

**Pittsburg Paige Co.**, Pittsburg, Pa., has bought for \$86,500, the 92x137 ft. it has under lease for its new three-story garage and salesroom.

**Traylor Motor Garage**, Allentown, Pa., has opened its fine new garage and sales building.

**Albany Garage**, Schenectady, N. Y., doing best business in history. Is averaging a Chevrolet a day in its salesroom.

**Toal Auto Supply Co.**, Buffalo, N. Y., has opened its fifth branch garage.

**A. & H. Garage**, Baltimore, Md., has leased a new 45x250 ft. garage building which it will operate in connection with its present garage.

**Hudson Garage**, New York City, to accommodate 600 cars, said to be finest garage in the world, will be ready for business Jan. 1.

**Charles P. Higgins and Cris McTaneney** are the new owners of Monument Garage Co., Trenton, N. J.

**Astor Garage Corporation**, New York City, has added a seven-story building at 267 W. 87th St., to its garage property on a twenty-one year lease with aggregate rental of \$250,000.

**Williams & Hoffman**, Oil City, Pa., will incorporate and materially enlarge its present good business.

**Arnold Garage**, Ellwood City, Pa., will soon open a new garage and salesroom.

**Lewis J. Fanner and A. G. Harvey**, Hornell, N. Y., have bought the Hornell Auto Co. and will enlarge and continue the business.

**Lincoln Garage**, Franklin, Pa., has opened its new building with a large display taken from the Exposition week manufacturers' show.

**West 66th St. Garage**, New York City, is building a new \$100,000 garage.

**Arthur E. Hyatt**, Washington, Del., has bought and will operate garage in connection with Hotel Stocklee.

**Thorn D. Brewer, Muncy**, Pa., is opening a new fire-proof brick garage and salesroom.

**Arnold Young and Lloyd Steckman** will occupy this month their new garage building in Newcastle, Pa.

**Kenneth Kammerer**, Bethlehem, Pa., is completing a large garage and will occupy it in January.

**T. F. Anderson**, Rochester, N. Y., is completing a \$10,000 garage.

**E. C. Bowers**, Trenton, N. J., will make extensive alterations in his Greenwood Ave. garage.

**Echo Motor Co.**, North Tonawanda, N. Y., is building large addition to its garage and salesroom.

**Pennsylvania Railroad** is building enormous storage warehouse in East Liberty, where cars on which demurrage has started will be stored. This policy is being adopted by all railroads.

**Geo. Frey and Wm. Schumm** have bought out the garage business of C. T. Austin in Niagara Falls, N. Y.

**H. J. Meyer**, Berlin, Pa., has bought out D. C. White and is sole proprietor of Berlin Auto Co. Garage.

**Arnold Young and Lloyd Steckman**, Ellwood City, Pa., are completing a new garage.

**Geo. H. Nelson**, Worcester, Mass., is president of the new 50,000 Modern Garage & Auto Co.

## Middle States.

**Fred Guilker and John Tlemeyer**, Springfield, Ill., will occupy the new garage to be completed at 210 E. Fourth St.

**Wm. H. Gilligan, Jr.**, Rhinelander, Wis., has bought out Clarence J. Wesley, his former partner in Oneida Garage Co.

**Dittmer & Stallbaum**, Elkader, Iowa, will complete their modern \$20,000 garage this year.

**Eckerman Bros.**, Sac City, Iowa, will replace their recently burned building with a fine new garage.

**Frank Falkenstein**, Lodi, Wis., has bought out his partner, Jesse C. Patterson, in the Buick garage.

**Lattimer & Menke**, Bancroft, Iowa, have bought out J. H. Devlin. With Harley Lowe they will continue in garage, repair and livery business.

**Wildor Garage**, Calumet, Mich., is completing a large addition to its building.

**Theo. M. Graves of Belvidere and Elmer Holmes of Rochelle**, Ill., have bought out Dexter Stocking's interest in their garage and salesroom.

**J. C. Lucas** has leased a two-story garage to be built at 6610-16 N. Clark St., Chicago. Reported term rental \$30,000 for ten years.

**Mark Miller and Herbert Brennan**, Anderson, Ind., have bought the Central Garage from Geo. A. Lanphear.

**F. W. Buehler** has bought the interest of his partner in the Shaver-Buehler Auto Co., Red Oak, Iowa.

**C. A. Todd**, Lancaster, Ohio, has bought the W. S. Sines garage.

**G. U. Vermillion**, Mt. Sterling, Ill., is putting on a needed addition to his garage building.

**Floyd McCrady and Fred Hillis**, Clio, Mich., have bought the R. R. Knight garage and salesroom.

**Baumgartner, Egger & Leninger**, Celina, Ohio, have bought the Lakeview garage, formerly owned by Wm. Alt.

**Skelly & Tate**, Warren, Ohio, have opened their new garage.

**J. J. and R. E. Mangold**, Rockwell City, Iowa, have bought the garage formerly owned by Fred C. Stearns.

**Alfred Maurer** is putting up a new garage at Richfield, Wis.

**Dick Marsh**, Bowling Green, Ohio, is now sole proprietor of the former W. M. Gray garage.

**J. E. Kelly** is putting up a modern 44x110 feet garage in Waseca, Minn.

**Dittmer & Stallbaune**, leading auto dealers in Elkader, Iowa, will add a \$20,000 garage.

**A. M. Wilson**, Mt. Gilead, Ohio, has bought out his brother in the Wilson Bros. garage.

**Glenn Tracy Garage**, Geneseo, Ill., has been compelled by its increasing business to add a full second story to the present building.

**Charles A. Keeler**, Davenport, Iowa, has converted his livery stable into a modern garage. Ernest Van Arnam will be superin-

tendent and Harry Hartzell in charge of the repairs.

**Mitchell & Turk**, Soldiers Grove, Wis., have begun business in their new garage.

**Overland-Hanson Co.**, Waterloo, Iowa, have opened their new garage, said to be the finest in the state.

**E. J. Coleman**, Rockville, Ind., has bought adjacent lots and will materially enlarge his present garage.

**Anderson Bros.**, Birmingham, Iowa, have nearly completed the cement addition to their garage.

**Nansewitz Bros.**, Alpena, Mich., will move soon into their new garage; a strictly modern building.

**Roy Hastings**, Lima, Ohio, will manage the new Paige Motor Garage.

**W. W. Jenkins & Son**, Clarksville, Iowa, have nearly completed their pressed tile and cement block garage.

**T. E. Schaible**, Ypsilanti, Mich., opened his magnificent new garage and salesroom with a public reception, attended by the mayor and many out-of-town visitors.

**Waterloo Auto & Supply Co.**, Waterloo, Iowa, will occupy its new garage and salesroom this month.

**Quincy Garage Co.**, Calumet, Mich., has nearly completed its modern building. Said to be the best equipped garage north of Milwaukee.

**D. F. Prussing**, Somonauk, Ill., has opened his new garage.

**Wm. H. Lorentz**, Marietta, Ohio, has opened his new garage and salesroom. He handles the Maxwell.

**G. L. Feters**, Washington, Iowa, has bought the Motor Inn garage.

**Len J. Barthell**, Cedar Rapids, Iowa, has bought the Werhan garage for \$18,000.

**E. B. Cochrane and Jay R. White**, Three Rivers, Mich., have combined their garage and taxi interests.

**R. E. Mangold** has bought the F. C. Stearns garage in Rockwell City, Iowa.

**Clayton Robb**, Osceola, Iowa, has bought the West Side Garage.

**S. W. Ford and R. M. Harder**, Oak Park, Cal., have bought the interest of J. Jori in the Oak Park garage.

**Raw W. Becker**, Grand Rapids, Mich., has paid \$45,000 for the garage property he has been occupying for five years. He will make many improvements.

**Allen Garage Co.**, East Allen, Wis., announce the speedy opening of their new garage building.

**Valentine & Son**, Rochelle, Ill., have nearly completed their new building, one of the best in their part of the state.

**Harry S. Jones and Fred M. Steel**, Kirksville, Mo., have bought and are now operating the former H. & M. Garage.

**A. F. Kreplin**, Grand Rapids, Mich., has moved to 1110 Terrace Ave., to accommodate the demands of a rapidly growing business.

**W. J. Large**, Grand Rapids, Mich., has opened the Court House Storage Garage. An efficient repair and service department will be added.

**J. J. and R. E. Mangold** have paid \$20,000 for the Sac City, Iowa garage of Fred C. Stearns.

**C. J. Weber, Charles Gale and Leroy Gale**, Fort Wayne, Ind., are building and will operate under the name Motor Sales Corpo-



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**Non-Leakable**

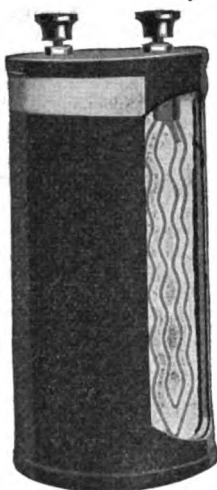
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Starters  
Motor Boats  
Electric Trucks  
Street Car and  
Railway Systems  
Telephone  
Systems  
Meter Testing  
Ignition Systems  
of all kinds  
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Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrounding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

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**Pondelick Brothers, CHICAGO ILLINOIS**

ration one of the largest and most complete garages and salesrooms in Indiana.

**Overland-Irwin Co.**, Keokuk, Iowa, has bought the Hubinger building and will transform it into one of the finest garages and salesrooms in the country.

**Jahn Bros.**, Davenport, Iowa, will specialize in cylinder fitting and regrinding; abandoning general repair work in their garage.

**Overland Auto Co.**, Grand Rapids, Mich., is going ahead with its new three-story, fireproof, \$65,000, 120x200 ft. garage.

**Norval Robey**, Caldwell, Ohio, has torn down the Radcliff Garage and is rebuilding to include a complete repair shop and accessory room.

**Reilly Bros.**, Portsmouth, Ohio, have completed alterations in their new garage and auto salesroom. Roscoe Funderberg is manager.

**Forest Law**, Greenfield, Iowa, has bought the interest of Ed. Bruce in the Russell & Bruce Garage.

**Studebaker Garage**, Goshen, Ind., has opened for business.

**Holmes & Hawk**, Oskaloosa, Iowa, have nearly completed their up-to-date garage building.

**A. F. Kreplin**, Grand Rapids, Mich., has opened a complete garage, storage and repair room at 96-98 Front St., the firm name being Riverside Garage.

**Bode Auto Station**, Oak Park, Ill., is completing a large addition. The new building will be devoted largely to electric cars, the Bode garage having its own generating plant.

**Heiniger Auto Sales Co.**, Lima, Ohio, will have a handsome, fireproof garage and a salesroom devoted to Studebaker cars and sundries.

**Standard Garage Co.**, Toledo, Ohio, has occupied its new quarters, 1518 Madison Ave.

**C. A. Todd**, Lancaster, Ohio, has bought the D. L. Hausberger Garage.

**J. R. Inskeep**, Holly, Mich., finds his present quarters inadequate and has bought a good corner and will build a new garage and accessory rooms.

**R. & W. Auto Service Co.**, Cleveland, Ohio, has occupied its specially constructed garage, one of the best buildings of the kind in Cleveland.

**F. R. Whitney**, Cedar Rapids, Iowa, soon will move into his new garage and salesrooms.

### Western States.

**M. J. Coutant and Fred Shannon**, Fairburg, Neb., have opened a repair shop and service station in their new garage building.

**Frank and Clyde Charlton**, Harrington, Wash., have bought the McInnis garage for \$13,700 cash.

**Scales Motor Co.**, Sheridan, Wyo., will occupy a new garage and service station building, costing \$10,000.

**W. G. Brooks**, Roundup, Mont., has leased the 20,000 garage building, to be completed by Herman Blank.

**V. A. Jay**, Reynolds, Neb., has bought the Ray Bothwell garage.

**Alva Brown**, Fairmont, Neb., is remodeling the old opera house building into a modern garage.

**A. N. Hahn, Dr. J. B. Sullivan and M. J. Walsh**, Butte, Mont., are associated in the building and future management of a garage occupying a greater ground space than any building in the city.

**W. J. Pierce**, Grand Forks, N. D., has opened his new garage and Overland salesroom.

**Tom Spaulding**, Dodge City, Kan., will manage the new Auto Supply Co. garage.

**Sweet-Drain Auto Co.**, Eugene, Oregon, has been forced by new business to build a 40x80 fireproof addition to its garage.

**G. M. Ross**, Spokane, Wash., has opened his Service Garage, fully equipped for all repair work.

**Hoye & Fignaskau**, Fargo, N. D., have been compelled to double the size of their garage.

**E. A. Thomas and H. F. Miller**, Anaconda, Mont., have begun business in their new Harrison Ave. Garage.

**F. A. Williams**, Spokane, Wash., has leased the Old Metropolitan Garage. He will spend about \$6,000 in remodeling and additions.

**Cornell Motor Co.**, Plainview, Texas, has begun work on its new brick garage and salesrooms.

**L. O. Lindburg**, Grand Forks, N. D., has moved into his new garage and salesroom building.

**R. S. Henderson and C. J. Ash**, Pocatello, Idaho, have leased the new Lewis garage and added a well equipped machine shop.

**Allen Curtis**, Lawrence, Kan., has opened his new garage building under the title of Peerless Garage.

**A. S. Reed**, Stockton, Cal., has opened a new garage and repair shop at 16 North Aurora Street.

**T. J. Knutson**, Billings, Mont., has bought the Auto Exchange and will conduct it as a garage and service station.

**John Farrington**, Salt Lake City, Utah, has abandoned the livery stable business and bought a new building in which he will conduct the Farrington Garage.

**Begner & Fields**, Portland, Oregon, have leased the new garage building to be completed by Daniel Kern and will add a complete garage and auto service to their present Ford agency.

**Fifth Avenue Garage**, Jamestown, N. D., now is in full working order. A full line of accessories will be carried.

**Glen J. McMaster**, Ottawa, Kan., is adding to his garage space. He will occupy a total of 22,500 ft.

**Wright Garage**, Frederick, Okla., soon will occupy its new quarters.

**Smith's Savvy Garage**, San Diego, Cal., has the honor of being chosen the ideal garage of the country, by the Burroughs Company.

**T. G. Williams**, Nowata, Okla., has opened his garage under the title of East Side Garage.

**Paul W. Marston**, Watsonville, Cal., has bought out all other interests in the Jones Garage.

**Leo C. Jordan**, Pueblo, Colo., will open a first-class garage and salesroom in connection with his Scripps-Booth agency.

**C. B. Harker**, Missouri Valley, Iowa, has bought his partner's interest in the Harker-Zahner Garage. He will continue under the title Harker & Son.

**Dinneen Garage**, Casper, Wyo., is nearly completed, doubling the old floor space. Roy Dinneen is proprietor.

**Huff Garage**, Santa Barbara, Cal., is almost finished. Said to be one of the finest in the state.

**R. C. Andrus and Earl Canning**, Miami, Arizona, have opened their Ford Garage in conjunction with the Globe repair shop.

**Wilbur R. Davis**, La Plata, Mo., has bought the La Plata Auto & Supply Co. garage. J. D. and Wm. Huston, from whom Mr. Davis bought, will retain the agency of the Dodge car.

**Wray-Dickinson Sales and Garage Co.**, Shreveport, La., are building a large service station and storage rooms in addition to their garage. Cost, \$53,500.

**Harvey Atkins**, Oklahoma City, Okla., has been added to the force of the Metropolitan Garage.

**Bedford Motor Co.**, Bedford, Va., is building additions to its present garage and will have one of the most complete establishments in the state.

**Memphis Garage**, Memphis, Mo., has bought out the Hudson Garage.

**F. Conner**, Santa Fe, N. M., is opening a completely equipped garage in connection with his Overland salesrooms.

**N. M. Aigner**, San Jose, Cal., is building a new garage embodying many novel features. He will specialize in storage.

**F. H. Drosselmair**, Wathena, Kans., is completing one of the largest and best equipped garages in northeast Kansas.

**Pueblo-Overland Auto Co.**, Pueblo, Col., has bought the Royal Garage and will continue it in connection with its auto sales department.

### Southern States.

**I. N. Brooks**, Plainview, Texas, owner of Connell Motor Co., has begun work on a new garage building.

**J. H. Scarborough**, Unionville, Mo., has bought the Arbogast-Overland Garage and will continue it, making a specialty of repairs.

**C. H. Crager and W. L. Gillidette**, Chillicothe, Mo., have bought the Chillicothe Motor Co. Garage.

**Cheney Bros.**, Dallas, Texas, are building a complete garage and storage plant. Total cost, \$30,000.

**Van Dunham**, Chickasha, Okla., soon will open a new and up-to-date garage. Repair work will be a specialty, in charge of W. E. Whittaker.

**A. J. Sheldon & Co.**, Bristol, Tenn., have bought the Kite-Barger and other garages and will continue under their firm name.

**Carnahan & Hoover**, Sharpsburg, Md., soon will open the first garage in the town.

**Chesney Bros.**, Gainesville, Texas, have begun building a new 108x188 ft. garage, to cost a total of \$35,000.

### Miscellaneous.

About the quickest way to gain local publicity is to have an attractive window display. Accessory houses will do their share in this line, but the garage owner himself can do even more by seasonable exhibits. Such a display always attracts the attention of passers-by and will be given good mention in local papers.

Up-to-date burglars are making a practice of coupling a garage robbery with that of the store or bank which is the chief object of their illicit intent. Ordinarily the garage is a public one and an automobile is the only thing stolen. Prevention of such a theft is better than insurance. A good burglar alarm should be "regular equipment" on a garage that is closed during the night.

Bad accounts form the main, almost the sole cause, of garage bankruptcies. In almost every case the "accounts receivable" item makes the assets loom up larger than the liabilities. But let no one envy the lot of the receiver who must make a good showing in collecting these accounts. A customer who will let a garageman go broke rather than pay his account is not apt to yield to the blandishments or threats of the receiver. Put a limit on the account of every customer and insist on a regular settling day. Don't send good money after bad. If the customer reaches his limit and doesn't settle on time, cut him off your credit list. There are exceptions, but the man who won't pay on time is not worthy your original estimate of his credit standing. Cut him down to a cash basis.



**RADIATOR CURE  
STOPS LEAKS**

"Two doses cured seven leaks"; "Just the thing"; "Leak permanently cured"; "Very efficient"; "23 years in business—best cure he has seen." These are comments of satisfied garagemen and users.

*Write for agency particulars and sample package.*

**THE M. W. DUNTON COMPANY, Providence, R. I., U. S. A.**

With the "Tonford" unit, any Ford, old or new, can be made into a one-ton truck. You can run it with but very slight increase in cost of operation as compared with the pleasure car. Its ability to take care of many more deliveries with the same cost of upkeep will quickly make it pay for itself.

**Tonford**  
TRADE MARK

**\$325 f. o. b. Detroit**  
56 and 64 inch treads

**DETROIT TRUCK COMPANY :: Detroit, U. S. A.**

**"CURKO" SOCKET WRENCHES**

Are turned from the best Solid Bar Steel and are Heat Treated. For **STRENGTH and RELIABILITY**

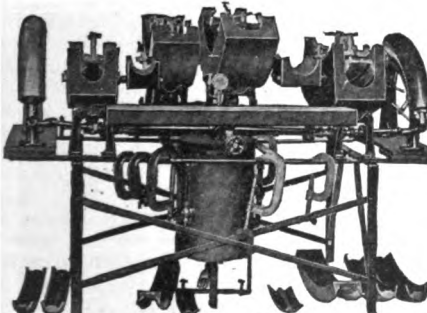
They are unexcelled. Ask for dealer's discount.

**Price \$1.00**



**Currier-Koeth Mfg. Co., Coudersport, Pa.**

**BIG MONEY DOUBLE TREADING**



Lots of Work. Vulcanized Double Treads wear better, look better. This Vanderpool Vulcanizer does double treading and repairs all size case and tubes from 3 to 5-inch.

**VULCANIZERS \$25 up**  
**VANDERPOOL CO., SPRINGFIELD, OHIO**  
and 1044 S' Main Street, Los Angeles, Cal.



**Hydraulic Arbor Presses**

work easier than any others.

We make many sizes for many purposes.

**WRITE FOR CATALOG**

**Lourie Manufacturing Co.**  
SPRINGFIELD, ILL.

*Tire Applying Press*

**DEALERS** Don't let your Customers Slip. There is some real live business passing your door this very minute.

**The K. C. G. SAFETY STEP**  
—WITH—  
**FOOT SCRAPER**

is a Necessity for Every Car.

**BIG PROFITS**

**SEND FOR CIRCULARS**



**GRAY-HEATH CO., Chicago - Distributors**

**SHALER Tire Repair Outfits**

**Improved Wrapped Tread Method Used by Big Tire Manufacturers**

Does better work than the big, high-priced vulcanizing outfits costing 3 to 5 times as much, and does it at lower cost. A boy can use it. It's the only vulcanizer that has Automatic Heat Control, and, therefore, can't undercure or overcure a tire. No watching or regulating. Steam or electric heat.

**Write for Catalog**

Send at once for the new Shaler catalog, the most complete Vulcanizer Catalog ever published, and ask for the low discount price of the Shaler Tire Repair Outfit. We will also send repairmen our book, "Common Sense About Tire Repairs," on request.

**C. A. Shaler & Co., 361 Fourth St., Waupun, Wis.**  
*The Largest Manufacturers of Vulcanizers in the World*



**THE DAVIS CYLINDER REBORING JIG AND REAMER**

**Money Making Machines for Every Shop**

For reboring old worn and scored Ford Cylinders. Enables the small shop to rebore cylinders as efficiently and economically as the largest shops.

Makes the Ford Motor like new. Reboring Ford Cylinders is a profitable business in any section.

Also manufacturers of the Davis Milling Attachment and Air Compressor.

Write for Particulars.

**THE HINCKLEY MACHINE WORKS**  
HINCKLEY, ILL.



Patronize our advertisers and build up your Association and Journal

## The PERFECTION CYLINDER GRINDER

will regrind all sizes of motorcycle and automobile cylinders. This grinder will fit on any ordinary engine lathe.

*Details on Request*

**WOOD & SAFFORD MACHINE WORKS**  
Great Falls, Mont.

## KENNEDY Auto Storage Covers

furnish efficient protection for cars in dead storage. They are made of strong, heavy paper, properly reinforced, and in standard sizes to fit any car.

Made only by

**The Kennedy Car Liner & Bag Co.**  
SHELBYVILLE, IND.

## 5000 CHIBECO FAN BELTS

leave our factory every day. Are you getting your share of the 5,000? Are you selling CHIBECO Leather Fan Belts or just Fan Belts?

Furnish your customer with belting that gives lasting satisfaction, made by a firm which has manufactured leather belting for over a quarter of a century.

Write today and we will gladly furnish you with name of our nearest jobber.

**Chicago Belting Co.** 100 North Green Street  
CHICAGO, ILL.



Price \$7.00

## The Cosmo Time Stamp Thousands in Use

Is proving its value in Garages all over the country. GIVES you exact DAY, HOUR and MINUTE each and every repair job is started and finished. Base your charges on exact time consumed and you can't help but make money in your repair department.

STOPS arguments with your customers. MAIL the COUPON, or write for one on 10 days trial. No obligation to purchase. Guaranteed—Accurate—Durable.

A. D. JOSLIN MFG. CO.,  
225 W. Erie St., Chicago, Ill.

Please send me COSMO TIME STAMP on 10 days trial. At the end of 10 days I will either return the Time Stamp or remit you the price, \$7.00.

Name.....  
Address.....

## NEW AND ENLARGED EDITION NOW READY DYKE'S Automobile and Gasoline Engine ENCYCLOPEDIA

It's worth ten times its cost if only placed on the shelf and used as a reference.

**A SIMPLIFIED Instruction on Repairing, Adjusting, Electric Systems, Etc.**

**EVERY GARAGE OWNER AND REPAIR MAN SHOULD HAVE ONE**

### PRICE

\$2.00, Prepaid, to A. A. G. O. Members  
\$3.00, Prepaid, to Non-Members

Some of the new subjects added are:

Electric Starters, Generating and Lighting Systems, up to date.

How to Time Valves and Ignition.

Six, Eight and Twelve Cylinder Engines.

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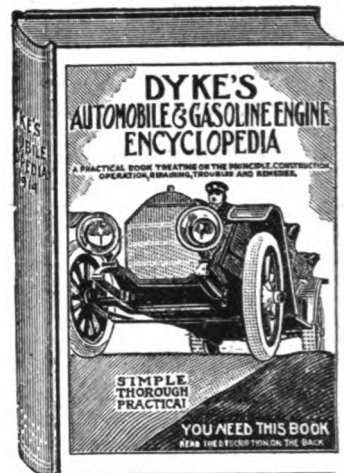
Complete Digest of Troubles.

This new fourth edition, over 2000 illustrations and over 800 pages.

This book is used by 56 automobile schools and endorsed by the leading automobile authorities of the world.

**YOU WILL BECOME AN EXPERT. ORDER TODAY.**

Address **BOOK DEPT., A. A. G. O., 53 West Jackson Blvd., Chicago**



Over one hundred thousand DYKE books sold, not one returned.

## A. A. G. O. Members Attention

**BUY THIS BOOK FOR \$2.00 AND SELL IT TO YOUR CUSTOMERS FOR \$2.50. YOU SAVE THEM 50c ON THE REGULAR PRICE AND MAKE 50c ON THE SALE**



## TRUNKS FOR AUTOS

THIS MEANS THE  
**KAM LEE COMPANY**  
440 E. Water St. Milwaukee

Trunks for all makes of cars and for all purposes  
Dust-Proof, Rain-Proof, Strong, Light, Convenient, Handsome  
Liberal Profits for Garagemen and Dealers. Send for our proposition



## TYPEWRITERS

Underwoods, Oliviers, L.C. Smith, Remington, Smith Premier and other makes  
\$30.00 \$25.00 \$27.00 \$15.50 \$18.50 \$15.00 and up  
Expert repairing and rebuilding. Every machine in perfect condition and guaranteed 5 years. Write for our liberal free trial offer and cut rates prices.

**ALL-MAKES TYPEWRITER CO.**  
162 North Dearborn Street - CHICAGO, ILL.  
PHONE CENTRAL 6035

## MILEAGE GALORE

**Will Run 5,000 Miles and More**

These tires are of double thickness and have 12 plies of fabric; therefore no punctures, no blow-outs. They are rebuilt by our special process, vulcanized and double treaded.

30x3 ..\$4.50	32x3½..\$5.75	34x4....\$7.75
30x3½.. 5.50	33x4 .. 7.50	36x4.... 9.00

Other sizes in proportion. Write for prices today. Send \$1 deposit for each tire ordered, and we will send the tire, balance C. O. D., subject to your examination and approval before paying for same.

**CHICAGO DOUBLE TREAD CO.**  
1235-39 South Wabash Avenue CHICAGO, ILL.

## How Is Your Accessory Business?

*Few garagemen are making the most of their opportunities along this line. There are liberal profits in accessories and the garage proprietor with his clientele of car owners is in an ideal position to handle them to advantage.*

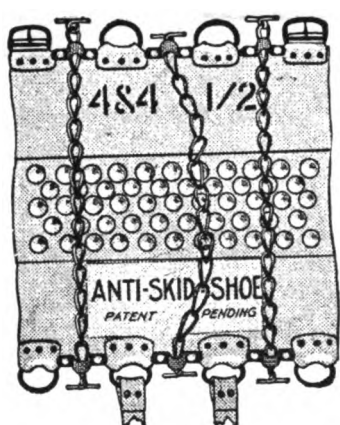
*If your accessory business doesn't "amount to a great deal" it will pay you to look into the matter and see what you can do toward broadening it out. Do not postpone action—start now to make the year 1917 pay you big profits in supplies and accessories.*

*You will find many helpful suggestions on the advertising pages of this journal. Some of the supplies mentioned in the announcement your customers buy regularly. Do they buy them of you?*

*You will find many new specialties that fill long felt wants of the car owner. The demand for these articles will be great during the coming year and those who handle them will clean up nicely. Why not get some of these profits?*

*It will surely pay you to read with care the advertisements in this and subsequent issues of the **AMERICAN GARAGE AND AUTO DEALER**. Investigate some of the attractive agency propositions. They offer you opportunities for liberal profits and most of them require very little capital to handle. Start the good work **NOW**.*





## ANTI-SKID-WEAR

Can be used as a blow-out patch—strapped to weakest part of tire—used as pull-out when stuck in mud. Will add one-third more life to tire, and will pay for itself in a short time.

The Anti-Skid Shoe is strong in construction and reasonable in price. Write for price, sizes and dealers' discounts.

**AUTO ANTI-SKID SHOE MFG. CO.**  
31 Nassau St. New York



## No-Stitch Cement

**All Live Dealers SELL No-Stitch Cement**

A sample can will prove its merits at once.

One ounce can sufficient to repair a number of lights.

Retails at 25c. Pints, for large consumers at \$2.00.

Write today for your trial can

**Auto Products Mfg. Co.**  
40 Elm St., BUFFALO, N. Y.

## "Hercules" Guarantee Welding and Brazing

Of all metals—aluminum a specialty. Superior machinists. Fine Piston castings.

### CYLINDERS REBORED

New Pistons and Rings furnished. We sell Piston Castings. We manufacture Acetylene Welding and Cutting Apparatus and Carbon-Removing Apparatus. Send on your work—our prices are right—or write.

**"Hercules" Welding & Machine Co.**  
223-225A N. 16th Street Philadelphia, Pa.  
Members A. A. G. O.

## GARDEN CITY SPRING WORKS

Manufacturers of  
**AUTOMOBILE SPRINGS**

2300 ARCHER AVE. CHICAGO, ILL.



## RIVES' AUTO-PEDAL NEVERSLIP PADS

Make Driving more comfortable and prevent feet from slipping.

**Full Set \$1.00**  
ATTACHED TO ANY CAR IN A MINUTE.

Close dealer co-operation insures quick sales. Write for proposition.

**Geo. H. Rives Mfg. Co.** 2187 Woolworth Bldg., New York

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## LYON SPRINGS

**SELF-LUBRICATING**  
(Stanley Patent)

**NO RUST—NO SQUEAK—GUARANTEED**

**The Edward F. Lyon Company**

Send for Catalogue 6-A Woodward Ave. and Antoinette St.,  
Key to bigger profits and better service. DETROIT, MICH.

Patronize our advertisers and build up your Association and Journal

# The Garage and Shop Market Place

## AUTO CAPE TOP CO.

Seat Covers. One-Man Top.  
Victoria Tops. Painting.  
Woodwork. : : : : :

Liberal Commission  
to Garage Owners

Calumet 5600

2334-6-8 Michigan Ave.,  
Chicago, Ill.

## SPEEDOMETER SHAFTS REPAIRED

Any broken Speedometer Shaft repaired as good as new with our **Patented! Seamless Steel Ferrule.** Parts and Repairs for most any Speedometer (except instruments). Write for illustrated circular.

**SPEEDOMETER REPAIR CO.**  
1303-1307 W. Jackson Blvd., CHICAGO, ILL.

**FOR SALE—ONE-HALF INTEREST** in an established service and storage garage in Oklahoma, full of storage and fine repair trade. Also agency for a popular car. Address W. T. AMERICAN GARAGE AND AUTO DEALER.

**GARAGE FOR SALE—On Yellowstone National Highway.** 60-car capacity, excellent business all year. A golden opportunity for the right man. \$3,500 worth of tools, stock and equipment; 5 year lease. Price, \$4,000. Address, A. M., AMERICAN GARAGE AND AUTO DEALER.

**GARAGE WANTED—Geographical location not so important as other conditions.** In answering, give size of town, volume of business, prospect of increase, number of cars, price, terms, all information that will assist a decision. Address, J. A., AMERICAN GARAGE AND AUTO DEALER.

**GARAGE FOR SALE—Located on W. Mich. Pike, 100 miles from Chicago.** City of 11,000; well established, cheap rent, long lease, full stock of accessories, auto livery in connection (its sale optional). Price, complete, for tools, stock, lease and cars, \$3,500. Poor health reason for selling. Address B. H., AMERICAN GARAGE AND AUTO DEALER.

We buy and sell Automobile, Mining and Industrial shares. We can give you a price on any stock.

**C. S. Mather & Son,**  
17 No. La Salle St.,  
Chicago, Ill. Phone, Main 2358

### PROTECT YOUR IDEAS

Many of the best selling accessories and supplies were invented by garage and repair men. Protect the ideas you develop. A patent, a trade-mark or a copyright may mean the difference between affluence and poverty in later years.

**CHARLES TURNER BROWN,**  
127 North Dearborn Street, Chicago, Ill.

## Automobile Cylinders

### REBORED AND GROUND

PROMPT, EFFICIENT SERVICE.  
PRICES MODERATE.

**STERLING ENGINE CO.**  
331 S. Clinton ST., Chicago

### ENGINES—A LARGE STOCK SAVING OF 50% TO 75%

50 H. P. Marine Engine, \$100; 30 H. P. Cadillac Engine, \$75; 35 H. P. Continental, \$75; 35 H. P. Wisconsin Engine, \$100; 3 Cyl. Chass 30 H. P. A. C. Bosch Magneto, \$65.

### MOTOR BOAT

Timkin Axles, Transmissions, Low and High Tension Magneto, and many other parts, at great savings, while they last. Order now before they are gone. Give description of parts wanted.

**ROBERTSON,**  
1255 North Clark St., Chicago, Ill.

## AAA SCORED CYLINDERS

Repaired by Patented Electric process. Filled with a silver and nickel alloy. (Eliminates Grinding.) No warping or enlarging of cylinder bore. Same piston and rings used. Reshipped 24 hours after received. Also do welding and grinding.

**L. LAWRENCE & CO.**  
1522 S. Michigan Ave. 292 Halsey Street  
Chicago, Ill. Newark, N. J.

### LEARN THE AUTOMOBILE BUSINESS

We teach you construction, repairing and driving in 6 to 8 weeks. Special instruction in Acetylene Welding, Knight Engines, Vulcanizing, Electric Starters, Automobile Salesmanship. Greer graduates always in demand. Earn \$150 per month and up.

Courses \$15, \$35, \$50, \$65 and \$150  
Booklet "How to Succeed in the Automobile Business"—FREE. Write today.

**GREER COLLEGE OF MOTORING**  
1519 S. Wabash Ave. Chicago, Ill.

**"HURRY-UP" RADIATOR REPAIR SERVICE.** Sheet Metal work that pleases. Fenders, hoods, gasoline tanks, etc., repaired and built to order. **CRAFTSMEN METAL CORPORATION,** 2815-17-19 Wabash Ave., Calumet 30, Chicago.

## SO-LUMINUM

### "DON'T SCRAP ALUMINUM PARTS."

SAVE them with SO-LUMINUM, new, great welding compound; ¼ time and cost of acetylene. No flux—use gasoline torch.

**Trial Bar With Full Directions, 50c.**  
Booklet 8

**SO-LUMINUM MFG. CO.,**  
1790 Broadway New York

**STARTING AND LIGHTING EQUIPMENT**  
Magneto, Colla, Lighting, Generators, Starting Motors, Magnetizers. We manufacture, sell and repair. Prices right and service the best.

**H. B. WEBER & CO.,**  
1336 Michigan Avenue, Chicago, Ill.

**ANDRE G. CATELAIN**  
Everready Automatic Engine Starter. General machine work for foreign and American cars. Welding of all metals. Manufacturer Cateilain Hose Coupling.  
1446-8 Indiana Ave. Chicago, Ill.

A big opportunity for garage men and dealers to handle and represent

## THE BRICKEY AUTO HEATER and other high grade AUTO SPECIALTIES

The Brickey Auto Heater will keep a car at parlor temperature in winter. The reasons why it is the only thing to use are—

### Simplicity

Is is the simplest device conceivable and any car owner can readily understand the principle. No exhaust gases are used.

### Price of \$3.90 and \$4.90

for the front and rear heaters, respectively, insures its popularity and ready sale. No cost for fuel.

### Effectiveness

Either heater will send a continuous stream of pure heated air free from gases and fumes.

LET US HEAR FROM YOU TODAY

## THURSTON AUTO SUPPLY MFG. CO.

3020 Michigan Ave., Chicago

Phone Calumet 745

**LOCATION WANTED—For a Battery Station and Fire Shop.** Have experience and capital. Prefer town about 3,000, but would consider smaller place in Kansas, Oklahoma or Texas. Address H. N., AMERICAN GARAGE AND AUTO DEALER.

**GARAGE FOR SALE—Live Minnesota town of 16,000—on three tourist trails.** Motorcycle business in connection; complete machine shop, welding plant. Keep three men busy. Inventory \$2,500; will sell for \$2,000 cash. Address A. E., AMERICAN GARAGE AND AUTO DEALER.

**GARAGE FOR SALE—Live Kansas town of 10,000, on main business street; brick building, 25x150; up-to-date; rent \$50 month. Shop fully equipped; full stock of accessories. Best location in town. A money maker. Price, \$3,500. Address H. A., AMERICAN GARAGE AND AUTO DEALER.**

**GARAGE FOR SALE—Live Illinois town of 9,000. No competition. 30 car capacity; new brick building; heated. Rent, \$30.00; 5-year lease. Full of storage work; three men and two helpers. Did \$10,000 business last year. Stock will inventory \$1,800. Sell for \$2,500. Address J. F., AMERICAN GARAGE AND AUTO DEALER.**

### WANTED—OLD CARS

Will pay highest prices and **spot cash** for old cars in any condition. Jackson Auto Salvage House, 560 Jackson Blvd., Chicago.

**SALESMAN WANTED,** one with car preferred, to demonstrate and sell automobile accessories. Sales Manager, 650 Woodward Ave., Detroit, Mich.

An  
Electric  
Sign



Will  
Keep You  
Busy

## Mr. Garage Owner, They Can't Lose You, If—

you install a compelling, trade-attracting Federal Electric Sign on the front of your garage.

You want more business — this is one of the best and cheapest ways to get it. Your Electric Sign is your trade mark. It impresses *your* garage indelibly on the automobile owner. It is the surest, quickest and the most economical means of keeping before the public.

Let us show you how cheaply and how effectively we can carry out your ideas. Address Department S.

**COMMONWEALTH EDISON COMPANY**  
Edison Building, 72 West Adams Street, CHICAGO

# This Sign Means Big Profits

To give your customers real satisfaction—To replace springs in the shortest possible time—To make good profits with little work—use

**HIGGINS QUALITY  
SPRINGS**  
Used for Replacements

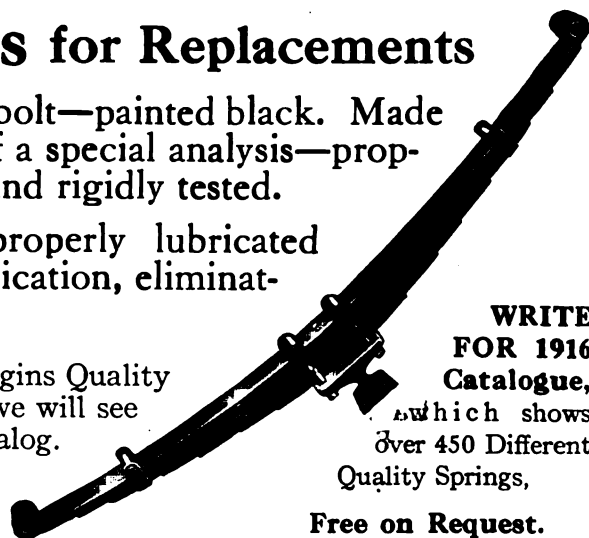
## Higgins Quality Springs for Replacements

They are guaranteed—made without center bolt—painted black. Made from best grade of motor car spring steel of a special analysis—properly heat treated, scientifically constructed and rigidly tested.

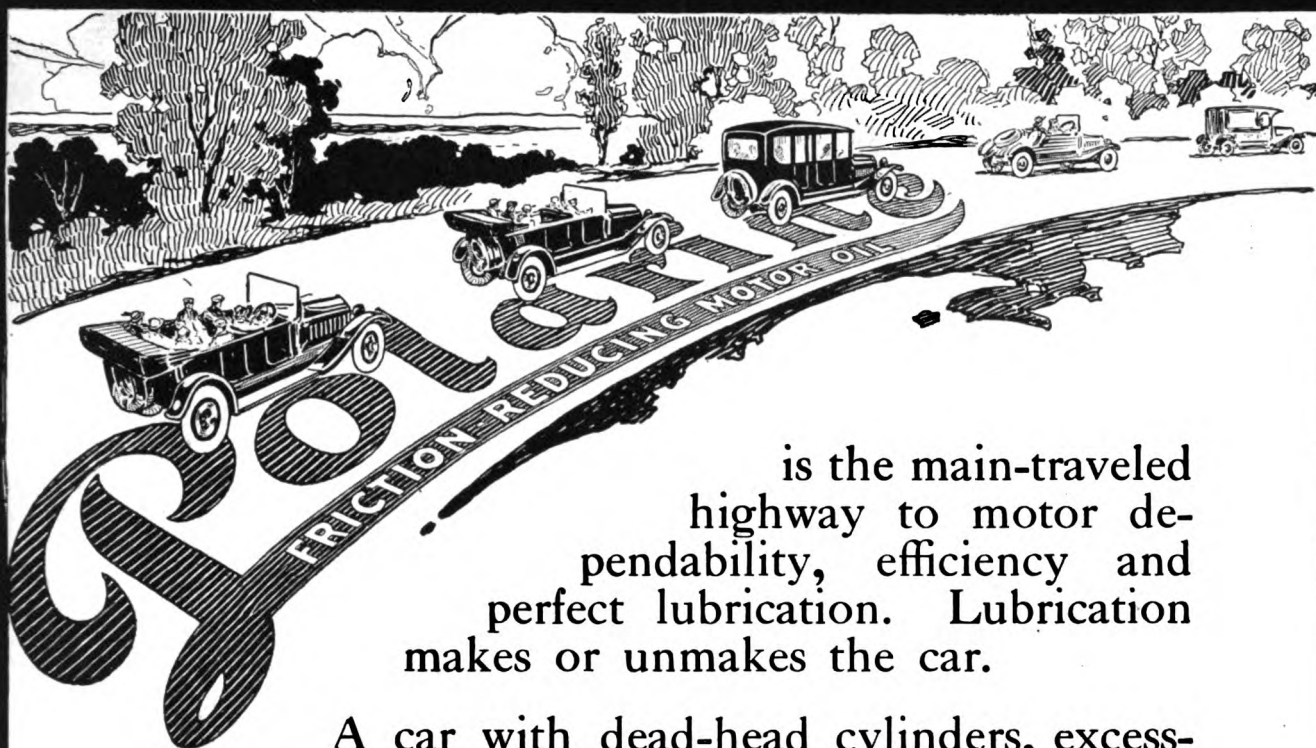
Equipped with Rebound Clips—leaves properly lubricated with a special high grade spring leaf lubrication, eliminating "squeak"—preventing rust.

**ASK YOUR SUPPLY HOUSE** for Higgins Quality Springs if they do not handle them. Write us and we will see that you are supplied. Be sure and ask for our catalog.

**Higgins Spring & Axle Co., Racine, Wis.**



**WRITE  
FOR 1916  
Catalogue,**  
which shows  
over 450 Different  
Quality Springs,  
**Free on Request.**



is the main-traveled highway to motor dependability, efficiency and perfect lubrication. Lubrication makes or unmakes the car.

A car with dead-head cylinders, excessive carbon or jerky power is as unreliable as a balky horse.

Dependability is the chief requisite of a motor

Polarine flows freely at zero and maintains the correct lubricating body at any motor speed or temperature.

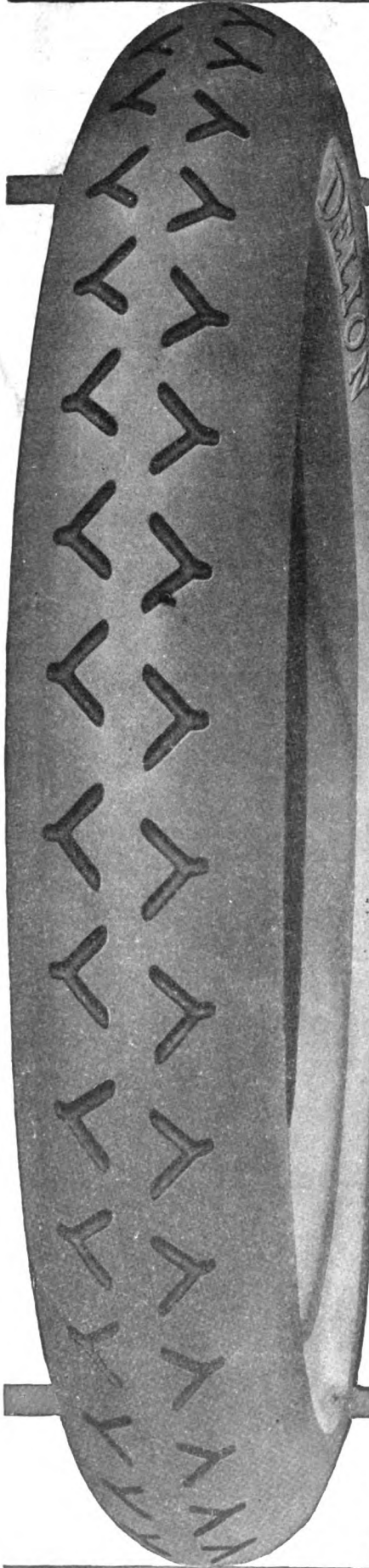
Polarine is produced scientifically and is of proven efficiency as may be attested by approximately 450,000 motorists.

Order a half barrel today—it costs less per gallon that way than in smaller quantities.

**STANDARD OIL COMPANY**  
CHICAGO (Indiana) U. S. A.

***Use Red Crown Gasoline and get more power, more speed, more miles per gallon***





## Here's Tire-selling on the basis YOU call the RIGHT one

**T**HIS is what you've been trying to get from your tire manufacturers:  
First, absolute territorial control of the Automobile Tires you sell.  
Second, good-quality Tires that you can sell at right profit.

We recently completed a thorough investigation of tire manufacturers' sales policies with relation to the dealer. We found that:

1—On a basis of dollar for dollar, no other tire manufacturer can provide you with a Tire that actually makes good on a guaranteed 5000 mileage, at any better price than we offer.

2—No other high-class Tire can give you better profits in sales than DELION offers. We made a side investigation among our three largest distributors. In each case their Delion business was yielding net profits greater than are necessary to any dealer's successful handling of Tires.

3—No other manufacturer has committed himself to a self-perpetuating, genuinely exclusive territorial arrangement such as we bind ourselves to with a definite sales Contract.

# DELION

We invite your own personal check-up on the soundness of the Delion Sales policy. We want you to satisfy yourself that we offer a Tire and a Tire selling arrangement that meet the requirements you yourself have been trying to specify.

The DELION Tire is made **right**—by men who are known as the country's highest authorities in the tire-making industry. A National Advertising Campaign—prepared and ready—is being purposely withheld because, with the interest of our distributors in mind, we will not risk an over-stimulation of demand. We even are watching carefully the number of our distributors, so that we can properly take care of each distributor. And, instead of pushing our distributors to stock Delion tires in maximum quantity, we show a way to carry smaller stock on a lesser investment.

Every Delion distributor has expressed his keen gratification at the results of the Delion Agency to him. He has found that it assures him a profitable tire business on the right basis. Without exception, every distributor has told us that the Delion Sales co-operation is an aid in developing business such as he has never known before.

To any distributor who desires our suggestions on the most efficient, most profitable methods of opening or conducting a Tire business, we proffer the personal assistance of one of our experts; or, if desired, will even furnish the distributor with a trained tire man at reasonable salary. Your territory may be open. If our way of doing business on this new basis appeals to you, write us.



## DELION TIRE & RUBBER CO.

INCORPORATED

MAIN OFFICE—1922 Broadway, New York :: 3449 Michigan Ave., Chicago



# AMERICAN GARAGE AND AUTO DEALER

OFFICIAL PUBLICATION OF THE A.A.G.O.



Volume 7  
Number 8

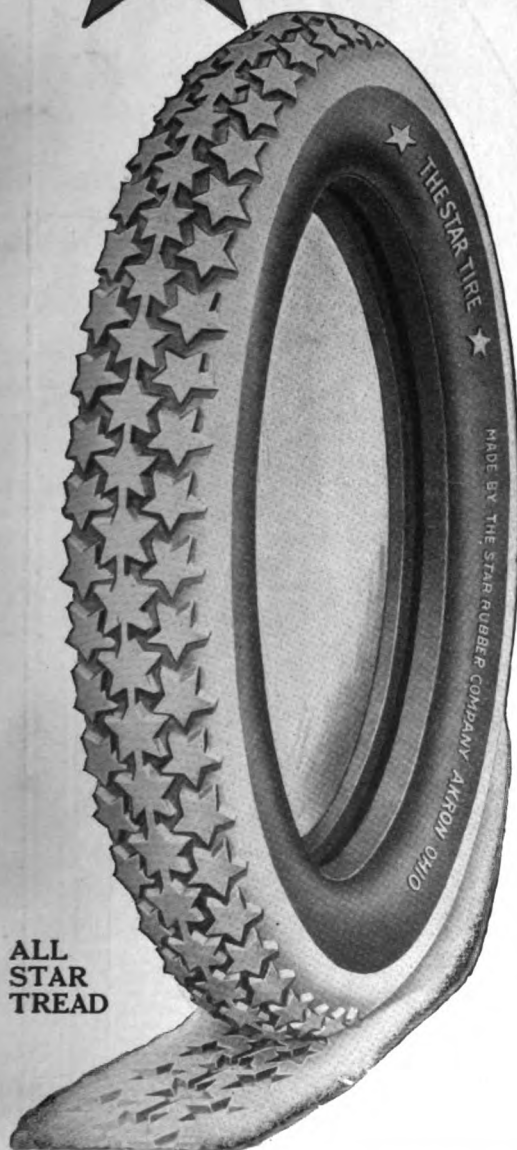
CHICAGO

JANUARY, 1917

\$1.00 Per  
Year

**STAR**  
HAND MADE  
**TIRES**

## Are You Ready To *Control* the Sale in Your Territory!



The successful tire merchant of tomorrow must absolutely control in his territory the selling of the goods he offers and be in a position to make a profit consistent with his efforts. The margin of profit now received from the quantity tire manufacturer does not exceed the overhead expenses of a well conducted distributing agency and he finds himself simply swapping dollars with the manufacturer. More and more service is being demanded by the tire buyer and in order to extend this necessary service the dealer must receive a large margin of profit.

During 1917 it is estimated that over \$350,000,000 will be spent in the purchase of tires for pleasure cars alone. It will be the golden opportunity for the beginning of a permanent business with continuous profit for tire dealers who sell the right tire at the right price and with a substantial net profit. Our organization has established a fixed policy for selling its entire output through

### Exclusive Dealers

There will be no branches and we offer a most unusual proposition for the dealers who become associated with us for putting unlimited effort behind their sales—receiving in return absolute territorial protection. The "ALL STAR" tread (and its kindred styles) promises to be a sensation in the tire field and will be produced by Akron's most experienced capital, its best manufacturing brains and by the most expert labor born of years' service in the perfection of tire making. If you are ready to accept this exclusive agency for the newest STAR in freedom, write us immediately. We pledge you the most liberal proposition ever made to tire dealers; we pledge the men who buy, a better tire—a value received in full; and the most perfect tire that money, brains, material and workmanship can build. The various styles of tires and tubes will be complete and with

5000 MILES GUARANTEED SERVICE

*Quick Action Necessary To Secure Your Territory*

**THE STAR RUBBER CO.**  
HAND MADE  
**TIRES**  
DEPT. 53  
AKRON, OHIO

Chicago Auto Show Exhibit—Auditorium Hotel  
In personal charge of O. L. Weaver, Secretary

FAIR LIST PRICES

FAIR TREATMENT

# GOODRICH SILVERTOWN CORD TIRES

## Stand the Knife Test

**B**EFORE you, its thick tough Goodrich Black Safety Tread slashed back, its sinewy, two-ply rubber-saturated cable-cord body laid bare, stands a Silvertown Cord Tire.

Before you stands the whole story of why tires WEAR. And why tires WEAR OUT.

For, contrary to common belief, tires wear out *INSIDE*—not *outside*—from internal frictional heat, rubbed up between the plies of the tire.

*Each extra ply means extra inside heat—extra wearing out of the tire.*

Were you to put the knife test to *all* tires, you would find three types of bodies:

*Cotton fabric*, swathed in five to seven plies;  
*Thread cord*, or *web*, (strings the size of a trout line, held parallel the circumference of the tire by interspaced cross-threads) gummed together in five to seven plies;

*Cable-cord*, the unique, patent-protected cross-wrapped, *two-ply* structure, found *ONLY* in Silvertown, the original cord tire.

Mark well the sturdy size of Silvertown's cable-cords, and that they are *cross-wrapped* into *two plies* and *but two*. Obviously Silvertown with but two plies must outlast *many-ply* tires with their *multiplied* inside heat.

Out of this *durability*, and the *resilience* of those flexible cable-cords, come Silvertown's *gasoline-saving economy*, *smoother riding comfort*, and *prolonged mileage*, you cannot afford to be without.

Know Silvertowns by their graceful *extra-size*, and their **RED DOUBLE DIAMONDS**.

**The B.F. Goodrich Co.**

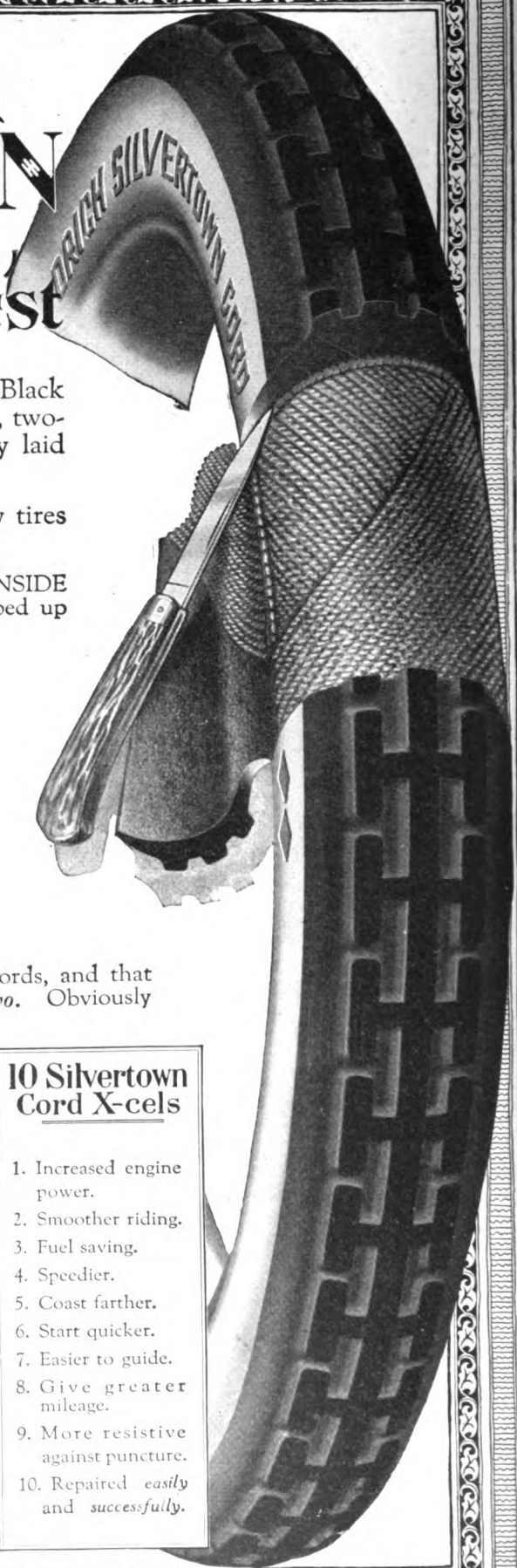
AKRON, OHIO

Also maker of the famous fabric tires  
Goodrich Black Safety Treads

*Silvertowns Make All Cars  
High-grade*

### 10 Silvertown Cord X-cels

1. Increased engine power.
2. Smoother riding.
3. Fuel saving.
4. Speedier.
5. Coast farther.
6. Start quicker.
7. Easier to guide.
8. Give greater mileage.
9. More resistive against puncture.
10. Repaired *easily* and *successfully*.

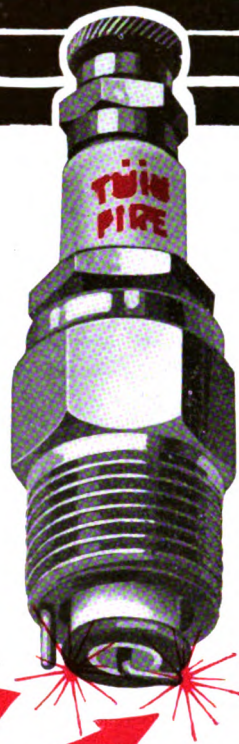




# TWIN FIRE SPARK PLUG

TRADE MARK

**THE ONLY PLUG  
THAT GIVES  
*distinct*  
TWO SPARKS**



## FAR IN THE LEAD

Here's the plug you've waited for—it's the plug motorists have always wanted but couldn't get. Now's your opportunity to boost your spark plug sales and make big profits. Twin Fire stands alone in the field. They are easy to sell and always give dependable service.

It's the only plug on the market that gives two distinct sparks at the same time. If one gap clogs, the other goes right on firing and a few explosions clean the fouled point. That's done **only** by Twin Fire. The two Twin Fire sparks are twice as intense as the spark of the ordinary plug—that means

complete combustions.

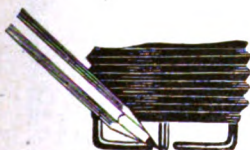
Twin Fire Plugs add "pep" to motors—reduce carbon and banish plug trouble. Every motorist can be sold Twin Fires because they are built to overcome the usual plug annoyances. A demonstration means a sale—one sale means other sales.

### Dealers Order Now

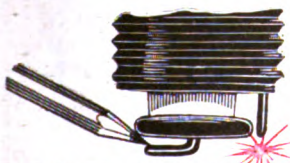
We've a splendid proposition for you. Big money is made selling Twin Fire Spark Plugs. Easiest selling plug on the market. Quick stock turnovers and liberal profit. Write or wire today for particulars.

**TWIN FIRE SPARK PLUG CO.**

658 Woodward Avenue, Detroit, Michigan



Old style plugs are dead when sooted or clogged with oil.



Twin Fire always fires. When one point clogs, the other continues to fire, cleaning the fouled point.





## The Secret of "Small Up-keep" is Perfect Lubrication

The first cost of an automobile is important, but what does it cost you to run it? That's more important. Is your car laid up frequently — scored cylinders — burned out bearings — smoky spark plugs?

**Use Polarine**  
FRICTION REDUCING MOTOR OIL

A perfect lubricant that covers even the remotest friction surface, protecting every wearing part and reducing friction to the minimum. Friction minimized means repairs minimized and increased power as well.

Polarine flows freely at zero and maintains the correct lubricating body at any motor speed or temperature.

Order a half barrel today. It's cheaper that way than in smaller quantities.

Standard Oil Company (Indiana) Chicago, U. S. A.

Use Red Crown Gasoline and get more power, more speed, more miles per gallon

14a



# Clear-O-Scope

## WIND SHIELD WIPER



### Motorists Must Have A Clear View of the Road



Especially is this true in Winter and Spring. In a driving rain or a blinding snowstorm, with a slippery roadway underneath, no one dares trust to luck. Automobile accidents are all too common in bad weather—because drivers cannot see the road.

Every car owner will want a device that keeps his windshield clear and transparent at all times and gives him the all-essential view ahead. For one little dollar the CLEAR-O-SCOPE guarantees the driver an unobstructed view of the road and makes safe driving in any weather.

This simple device needs no nuts, bolts or screws to fasten.

Inexpensive, Practical, Durable.

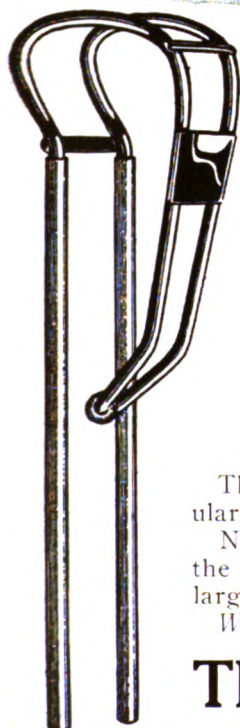
Slips over top of any wind shield instantly. Held by spring tension. Can't rattle. Clears and dries full width of wind shield with one motion.

### DEALERS Act Quickly

The low price and incalculable value of the CLEAR-O-SCOPE insures its popularity and ready sale. *The margin of profit to you is exceptionally large.*

Now is the best time to handle them. Our extensive advertising is making the CLEAR-O-SCOPE known and everyone in use is an ad itself. The demand is large—and growing. Get your share of the profits.

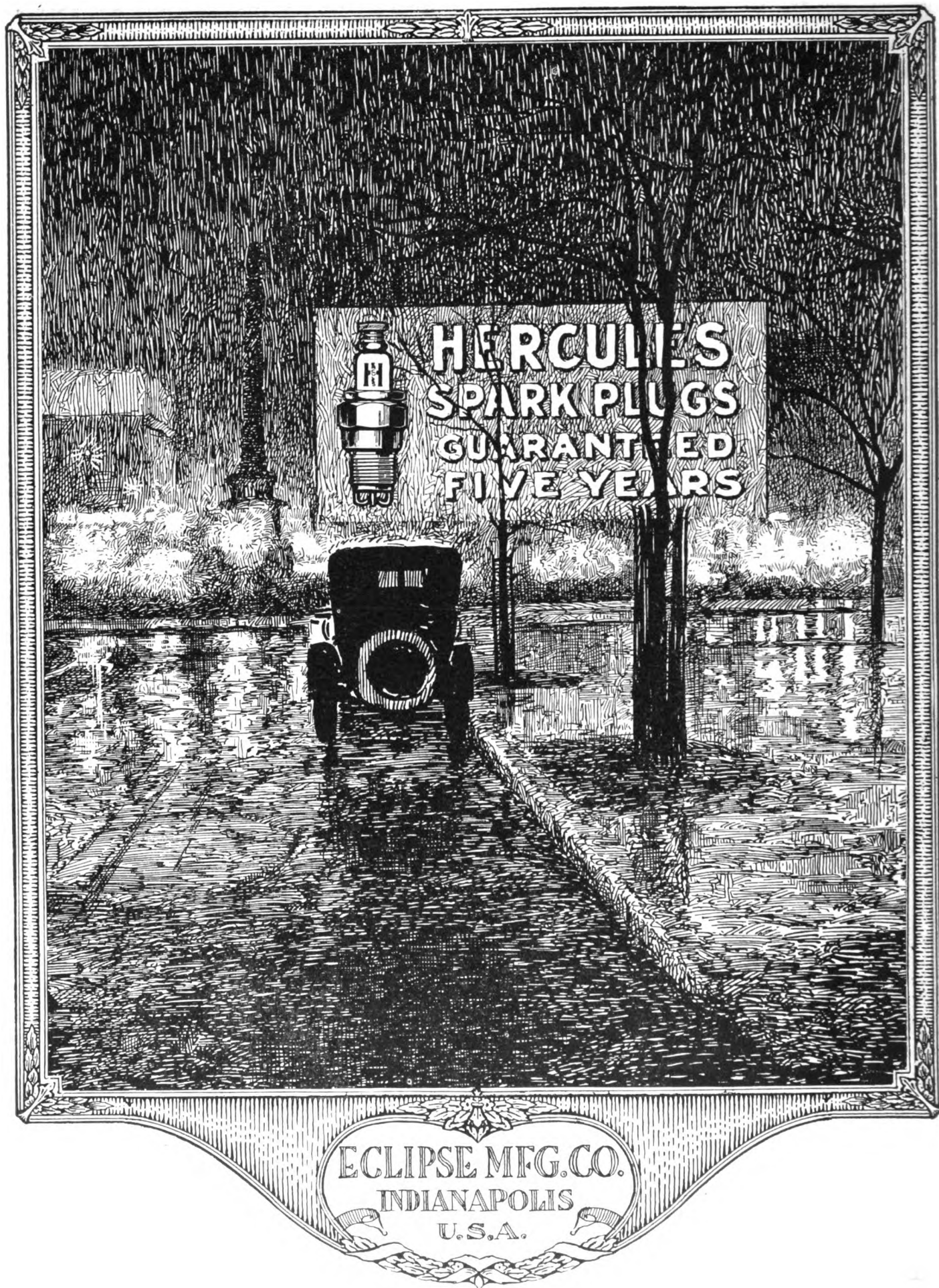
*Write today for dealers' proposition.*



## The Clear-O-Scope Company

Room 227  
738-40 West Madison St.  
CHICAGO





**HERCULES**  
**SPARK PLUGS**  
**GUARANTEED**  
**FIVE YEARS**

**ECLIPSE MFG. CO.**  
**INDIANAPOLIS**  
**U.S.A.**

# AMERICAN GARAGE AND AUTO DEALER

*Published Monthly*

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Guaranteed Circulation this Issue 15,000 Copies

# "NORMA" BALL BEARINGS

(Patented)

The service that a car or truck is capable of rendering is limited by the endurance of its weakest part. Makers of high-grade magnetos and lighting generators and starting motors are not willing that car or truck failure shall be charged against the accessories they build. Therefore, among the safeguards they provide for themselves and their customers, are "NORMA" Bearings—used almost without exception as standard equipment by makers of accessories of the better class.

Be Sure Your  
Electrical Accessories  
Are "NORMA" Equipped



## THE NORMA COMPANY OF AMERICA

1790 BROADWAY

NEW YORK

Ball, Roller, Thrust, Combination Bearings

# Every DELION Tire Dealer has made money on the line in 1916

**T**HERE, Mr. Dealer, is a positive and **significant** statement.

Nowhere in the list of our distributors or dealers is there one who does not report satisfaction and **profit**—and the intention to drive harder on the Delion in 1917.

## They Made Money Because—

1. The Delion is a **Quality** Tire—made to stand up under a 5000-mile guarantee, and then give hundreds of miles more.
2. The Delion Exclusive Territory Arrangement guarantees to the dealer **permanently** all the business he can develop.
3. Delion Co-operation with Dealers does not stop at Selling Helps. We give you all those—attractive, forceful and sales-compelling. But we go further. We'll go into your territory and by **personal** co-operation help you get started in a big way.

## Now, Then—

Somebody must make profits on tires. **Every Delion Dealer does.**

Why not ask us at once for the details of the trade-winning, trade-holding, Delion proposition? Now is the season for fast action.

## Write us today

**Delion Tire & Rubber Company, Incorporated**

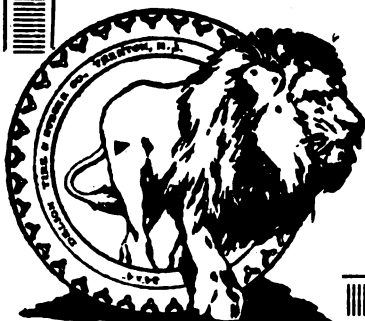
**Main Office: 1922 Broadway, New York**

**Western Office: 3449 Michigan Ave., Chicago**

**Factory: Trenton, N. J.**

# DELION

# TIRES



# AMERICAN GARAGE AND AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE,  
GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. VII. No. 8

New York — CHICAGO — Detroit

January, 1917

## Nineteen Seventeen a Year of Promise

THE A. A. G. O. has a constructive program for 1917 that should command the attention and support of every garageman, shopman and dealer in America.

### Organization.

First of all, the year should be one that will go down in history as a year of organization activity. In pursuance of this ideal the A. A. G. O. will actively assist in the formation of local and state organizations where there are none, and effect a closer union between such organizations as are now in the field with National Headquarters. No dictation from the A. A. G. O.—just helpful assistance of every sane and beneficial activity engaged in by the local body. It is proposed to adhere to the time-tried policy of individual membership in the national organization, as this yields a rugged loyalty to the national body and relieves the local treasuries of any direct financial burden, always a source of irritation and distress to young local and state bodies.

### Legislation.

The year opens with a strong legislative movement under way. Forty-two state legislatures are in session and garagemen, shopmen and dealers are rapidly swinging into line for effective lien laws, as well as a garage fraud law similar to the hotel keepers' law. Win or lose at the 1917 session of your legislature, the fight has begun and should be continued until victory has been won. The A. A. G. O. is back of every well-conceived effort to secure protective laws.

### Accounting.

Every garage, shop and store in this field should have a simple, effective, adequate accounting system. To that end the A. A. G. O. will work during the year 1917. It should be a system that will constantly inform you "where you are at" and force a complete record of your transactions, thus steering your business craft safely and plugging up leaks. Most of the systems advocated are too complicated,—won't do,—but the system we have arranged to install will meet the requirements of the man who has only the simplest, as well as he who has the most profound knowledge of accounting.

### Cost Finding.

How many garagemen, shopmen and dealers know their cost?

How many guess at it? The ratio is about 4 in 100, and of the 96 guessers 94 guess too low. Cost includes overhead of every sort—rent, labor, interest on investment, moderate salary for the boss, depreciation—then when you make a dollar net profit you have *got it*. It is not a theoretical or elusive profit,—it is actual. One of America's greatest experts in cost finding is at the command of the A. A. G. O. and its membership.

### Merchandising.

The garageman and dealer should be a *merchandiser*. A merchandiser must know goods and values, buying, advertising and selling. He must find sources of supply that will give him a choice line of staples and novelties carrying a large margin of profit to offset his lean-profit lines like tires, gasoline, etc. A. A. G. O. Headquarters proposes to *stand right back of its members* during the coming year with a special service designed to meet this need.

### Insurance Protection.

The garage, auto shop and retail auto trade are to be congratulated on the founding within the past year—organization just completed—of a Fire and a Casualty Inter-Insurance Exchange. Infinite patience and dogged persistence were required to "put this over." All A. A. G. O. members may obtain the benefits of the Casualty Exchange, and those whose buildings are constructed of material other than wood may become subscribers of the Fire Exchange. *The first A. A. G. O. man to obtain policies through one of these Exchanges saved \$425.00.* An unusual case, but it shows the possibilities of the method. Every member can save something worth while.

### Past and Future.

The past year has a record of achievements that is most encouraging—11,000 new members and increased Association efficiency all along the line. The new year is going to see still greater results with the continued help and support of the field. Your officers are loyal and earnest, the Association's plans are sound and practical, and nothing can stop the onward march of progress.

Nothing. The year 1917 is pregnant with unprecedented benefits to us all if we *stick together and push*. Will we? *We will.*

*C. M. Carr*  
Secretary-Editor.

# The Editorial Point of View

## New Year's Greeting

THE officers, field representatives and headquarters workers of the American Association of Garage Owners extend to the garagemen, auto shopmen and auto dealers of the country a sincere wish for a Happy, Prosperous and Satisfying New Year.

In doing so the editor hereof desires to make an observation. On the preceding page you have been given an outline of the program the Association and journal have adopted for 1917, but back of programs, of concrete efforts of every kind, of strivings for material ends, is the *spirit* which actuates them.

The happy, prosperous and satisfied man—these terms are used in their best sense—is the man who loves his work, is mindful of the helpfulness it expresses and its value to society, and who gets out of it the many joys that come to a man from sympathetic, friendly association with his fellows.

The man who lives best is he who enters into the very joy of living *right in his business*. This is living *plus*; it is business *plus*. Such a man is a business *enthusiast*, he is a conscientious *service* man, he is *honest, cheerful, obliging, and just*—to himself as well as others.

Why not make a rule for 1917 thus: Cut out the grouch, sweeten up, make your business a source of joy as well as profit, do all you can to elevate it, never knock but always boost—just *live* in your business and out of it and *be happy*.

## New Jersey Law Attacked

THE New Jersey garage lien law has been attacked and garagemen in that state are being counseled to make no fight to uphold the statute.

Apparently a few of our Jersey friends have contracted severe cases of cold feet, one having been bluffed into a settlement of his case out of court instead of standing for his full rights under the law, and another asserting his rights in a most halting, apprehensive manner. Others, we are glad to learn, are *putting on their fighting clothes*, giving evidence that there will be "*sumpin' doin'*" ere long. The A. A. G. O., it is needless to state, stands with the fighting contingent and proposes to do its share in making the *fur fly*.

On news and law department pages of this issue will be found interesting and illuminating particulars. Let us learn all of the facts, as they have an important bearing on our legislative work.

## Too Many Garages

NEIN, Non, Nay, Nei, N', Njeska, No, *Nix!* Too few garages better describe the situation. The increase in garages has failed to keep pace with the increase in the number of cars in use and the increased tendency on the part of car owners to utilize public garage service instead of maintaining one and two-car garages of their own.

The increase in the number of cars in use from 120,000 in 1906 to 3,352,000 in 1916 is amazing, to use John Willys' term, and, as remarkable as the increase in the number of public garages has been, the proportional disparity has grown astonishingly in the last two years in spite of the general impression to the contrary.

Garage construction is making great strides in the direction of solidity, permanence, convenience and artistic appearance. The old shack is rapidly disappearing. The live man who started in an old barn or shed five or ten years ago is now in a modern brick and concrete structure or out of business.

Garage expansion is the order of the day. The best available locations are in the newer residential districts, although signal opportunities are opening up in the down-town sections of cities which are legislating against the parking of cars in streets and alleys.

Good garages, and many of them, are needed, and the demand of today will be rapidly succeeded by the still larger demand of to-morrow.

## Our Gasoline Fight

A MOTOR car manufacturer expresses himself on the question of high prices for gasoline and the effect the passage of the Ferris bill is likely to exert on them, as follows:

I believe that the high cost of gasoline has more or less of a harmful effect on the automobile industry, but I do not believe that the passage of the Ferris general leasing bill as advocated by the A. A. G. O. would necessarily have any very immediate or great effect on the price.

New drilling has been going on at such a rate that the oil companies have recently reduced their price of crude oil in order to discourage drilling. You may say that this is mere manipulation, but I do not see how similar manipulation could be avoided even if the government lands were thrown open.

High prices are admittedly harmful to the automobile industry. No division of sentiment there. That the increase in the supply of crude oil, however, would not "necessarily" produce an "immediate" or great effect on the price is quite true, but all reasoning persons must admit that it is the logical *first step* in any sane effort to bring about a fair and favorable gasoline market, one that



would more nearly represent a square deal to the automobile industry and the motoring public.

Supply is basic, and by increasing the crude oil supply the gasoline stocks will be enlarged. No one producing interest controls more than 30 per cent of the production. Under the operation of the Ferris law this percentage would be lowered. In the refining branch of the oil industry one interest controls 70 per cent of the product; this percentage would also be lowered, thus insuring a more democratic control of the market.

Then, if results are not satisfactory, a more arbitrary method of price-making would needs be resorted to, namely, the passage of the Steerner-son bill authorizing the Federal Trade Commission to fix prices after a full and fair investigation has been made.

First, the natural method in harmony with the nation's comprehensive plan of conservation and development of our national resources; and second, the more or less autocratic method of interposing the machinery of regulation if the then conditions require it.

The A. A. G. O. program also includes the passage of the Howard bill to prohibit the exportation of gasoline, based on the principle of "America first;" or the Export Tax Bill, to discourage the exportation of the product, if such added legislation is found to be indispensable.

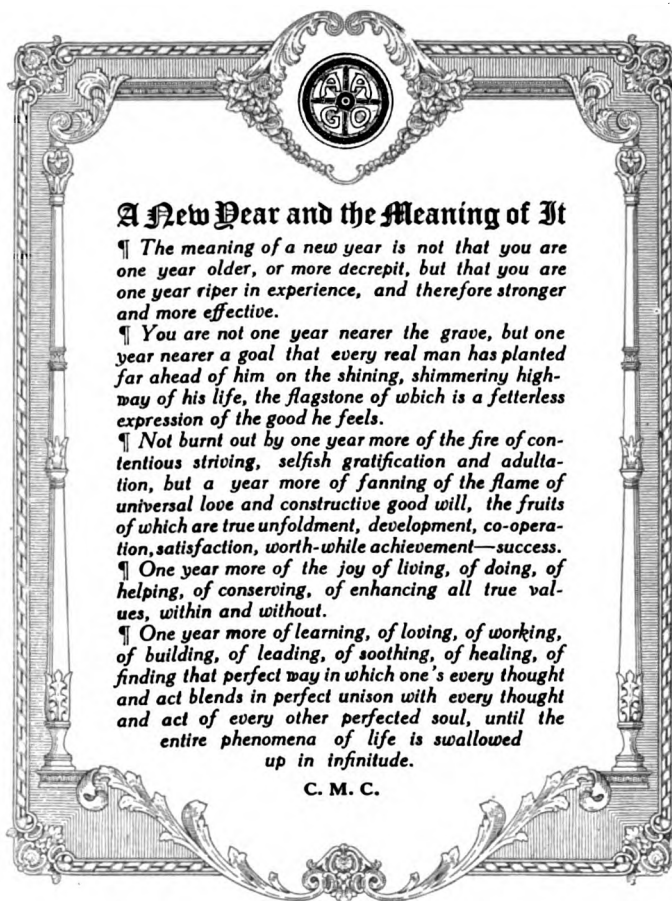
*Send for blank form petitions to be circulated among the voters of your community. The time is ripe for action. Uncle Sam is an interested party, as his army and navy are among the largest consumers of gasoline, and his interests and ours are identical.*

*Or, cut out the petition form on another page in this issue, paste it on a long white sheet and secure the signatures of your friends, then send it in to this office.*

### Another Knock Now a Boost

THE success of the A. A. G. O. has, strangely enough, aroused the enmity of some pretenders posing as friends of trade betterment and they have sought to label our organization as a mere appendage and background of this publication, the AMERICAN GARAGE AND AUTO DEALER. The fact pointed to as giving color to this claim was the small annual dues charged for membership.

Everything has to have a start, and the start to be wisely made must take into consideration the situation confronted by the movement started. National organizations of garagemen and auto dealers had been started before, and they had succeeded only in separating a considerable number of people from \$5 to \$15 in cash and placing in their hands certificates of membership—little else, we were told. The A. A. G. O. in order to differentiate itself from that sort of a proposition,



#### A New Year and the Meaning of It

¶ The meaning of a new year is not that you are one year older, or more decrepit, but that you are one year riper in experience, and therefore stronger and more effective.

¶ You are not one year nearer the grave, but one year nearer a goal that every real man has planted far ahead of him on the shining, shimmering highway of his life, the flagstone of which is a fetterless expression of the good he feels.

¶ Not burnt out by one year more of the fire of contentious striving, selfish gratification and adulation, but a year more of fanning of the flame of universal love and constructive good will, the fruits of which are true unfoldment, development, co-operation, satisfaction, worth-while achievement—success.

¶ One year more of the joy of living, of doing, of helping, of conserving, of enhancing all true values, within and without.

¶ One year more of learning, of loving, of working, of building, of leading, of soothing, of healing, of finding that perfect way in which one's every thought and act blends in perfect unison with every thought and act of every other perfected soul, until the entire phenomena of life is swallowed up in infinitude.

C. M. C.

made the dues so low that the idea of a "touch" for money and "a swift getaway" could not be logically entertained by any one solicited.

A monthly magazine of organization and trade was established by experienced publishers and organization men and the subscription price placed at \$1.00. The publication as the official organ and mouthpiece of the organization, coupled with \$1.00 per year as organization dues, created a proposition on which the garageman and dealer *could not lose* and which, from the standpoint of a money-grabbing scheme, would in no sense be worth while.

The bid for support was, therefore, "Try us out; you can't lose, and you can make one more effort to establish a national organization of your craft, composed exclusively of garagemen, shopmen and dealers, which can and will fight your battles effectively, as the organizations of jobbers and manufacturers in our own industry are doing for their members and as the retail organizations in other fields are doing for their people."

In little more than one year of active service on this \$2.00 a year basis, the skeptics have been convinced, as we believed they would be. The achievements of the organization speak for themselves and, accordingly, at the annual meeting held last November, the dues were advanced to \$4.00 a year and, later, an initiation fee of \$5.00 was added, the same to cover payment for supplies which pre-

viciously the member purchased of the association and paid for as extras.

Now the garageman, shopman or dealer who joins the A. A. G. O. *pays \$10.00 the first year and \$5.00 each year thereafter, \$1.00 of the amount being for the official journal, which is optional.* This converts the so-called appendage into the main body and the background into the picture. In other words, the perverted and untruthful characterization of the work of the A. A. G. O. leaders is no longer plausible but a reversal of the claim is now clearly established as the fact.

The knock that *was* is now the boost that *is*, for if there was point in the argument that with \$1.00 a year dues and \$1.00 a year subscription the Association was a publishing adjunct, *now that the dues are nine times as much as the journal subscription for the first year and four times as much each year thereafter, the same logic forces these detractors of our work to admit that the journal is an adjunct to the Association, as it has in fact been from the start, and that the Association is what it has always claimed to be, a bona fide organization of the trade, built to protect and to serve its constituency.*

### This Journal and Its "Competitors"

**WE** HAVE had it in mind to write an editorial under the above caption for a long time. There is need for it, because some of the journals of our trade regard us as a "hated rival," "competitor," and the like; others have a more correct view of the situation.

An Association journal like the AMERICAN GARAGE AND AUTO DEALER is not, in the generally accepted sense, a rival or competitor of the regular trade press. Experience has proven it. In the drug field, where this writer founded and for eleven years conducted the Association journal, the fears in this regard of the regular trade and professional press proved groundless, and the Association and regular trade journals have long since entertained for each other the friendliest of feelings. They may differ from each other in their views on various questions, but ill feeling engendered by business rivalry or jealousy is unknown. The same conditions prevail in the medical field, in the hardware field—in fact, in every field where there is an Association press.

The reason for it is easy to find. The Association press devotes itself largely to organization matters as a special line of news and propaganda, other things in the way of trade news and services becoming secondary matters. The trade press reverses this order, not because it underates the value of Association work, but because trade news and other purely commercial, mechanical and technical matters are the special lines of

work it was organized and established to promote, the Association affairs, therefore, properly taking a secondary place. The animus behind each class of enterprises as well as the character of their ownership, being different, the work sought to be done and the work actually accomplished by each is different.

Now as to the competitive cleavage: This writer has found in twelve years of experience that the advertising patronage secured by the Association press is not patronage taken away from the regular trade press, but that much additional patronage developed. He finds also that the Association journal often develops business that the trade press has failed to interest and that, after the advertiser has become a patron of the Association journal and is in this manner educated to appreciate the value of good advertising, he later becomes a patron of the regular trade press.

To sum up: The Association journal and the regular trade press should work upon the most friendly terms, because each has its own distinctive field in which it can do its own special work better than the other. This being so, we desire to urge that *all A. A. G. O. members treat the regular motor trade journals with courtesy, encouraging them in all the good work they do, and look upon them as in no sense a competitor of your Association Journal.*

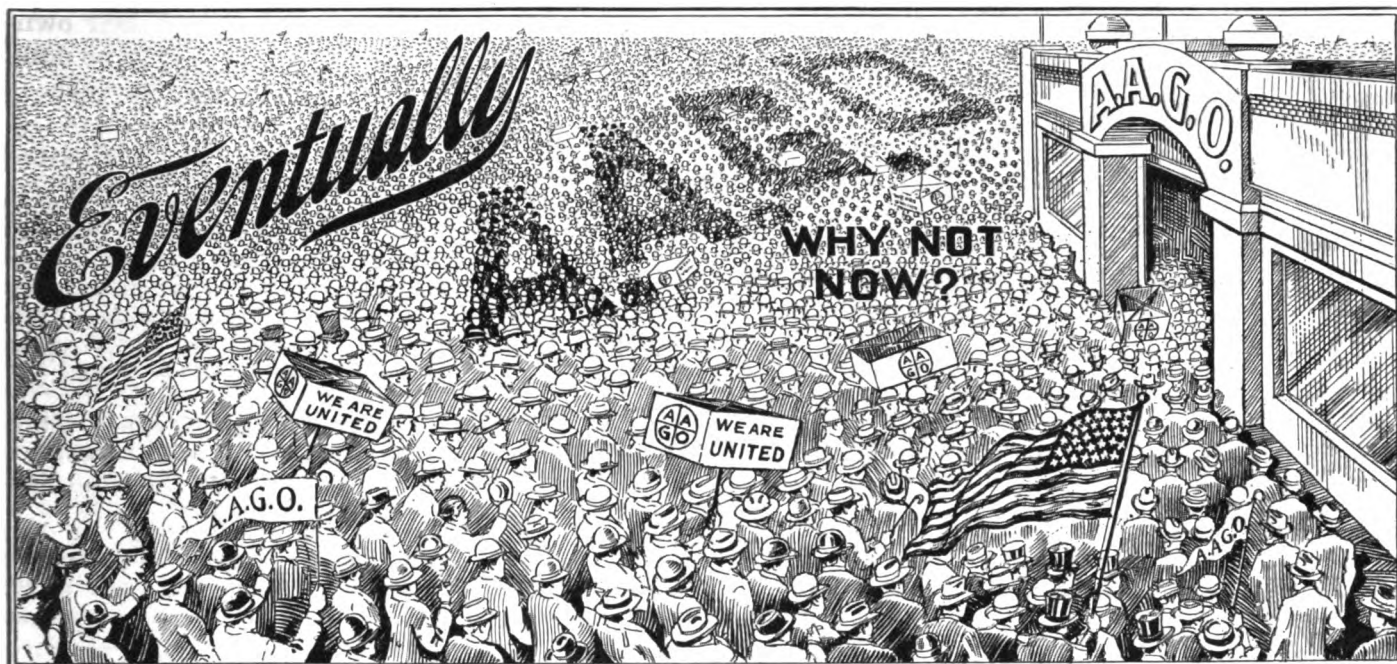
When they have a good word to say for organization work, commend them; when they overlook Association activities and the work the A. A. G. O. is doing, just remember that there are many fields of news and information that crowd their columns and that, after all, this journal makes such news and propaganda a speciality, and that to it all should look for what is going on in an organization way and for the stimulus which will make such efforts more continuous, widespread and successful.

When you are green you grow; when you are ripe you get rotten. The wise garageman will see to it that in his mental attitude toward his business and the public's relation thereto he retains just enough greenness to keep growing and avoids enough ripeness to prevent decay.

The mixed association composed of retailers, jobbers, manufacturers' agents, etc., can perform a useful social and educational function, but it cannot give voice to the retailers' needs and back up the retailers' just demands by organized power.

Don't be a private-garage-tended radiator and freeze up; be a sure-fire spark plug and start something.

# AN INVINCIBLE ARMY



With apologies to Washburn-Crosby Co.

When the garagemen, auto dealers, auto shop men and auto supply men get together they will make an army of retailers that will dominate the auto industry. They stand next to the people who are the ultimate consumers. Unorganized they are last to receive consideration; organized they command respect. Eventually necessity will drive us as retailers together into one mighty host. Why wait? Why not act now?

## The Steenerson Bill to Fix Gasoline Prices.

The Steenerson bill, if it became a law, would authorize the Federal Trade Commission to investigate and fix prices from time to time on gasoline and other petroleum products, the same as the Interstate Commerce Commission fixes freight rates. The bill was introduced by Representative Steenerson in the House of Representatives, March 29, 1916, and was referred to the Committee on Interstate and Foreign Commerce. Section 13 of the bill is the one that will interest AMERICAN GARAGE AND AUTO DEALER readers. It follows:

Sec. 13. Every wholesale dealer in petroleum in commerce, as defined by this Act, shall be subject to the provisions of this Act, and shall within sixty days after the passage of this Act post in his place of business for public inspection and file with the Federal Trade Commission a list of prices of the various grades of petroleum, gasoline, kerosene, or fuel oil sold by him at the various places where the same is kept for sale by him, and such prices shall at all times be just, fair and reasonable. If at any time any person, corporation, company, association, or any mercantile, agricultural or manufacturing society, or municipal organization shall make complaint to the Federal Trade Commission of any violation of this Act, which complaint shall briefly state the facts, thereupon a statement of such complaint shall be forwarded by the commission to such wholesale dealer, who shall be called upon to answer the same within a reasonable time, to be specified by the commission. If such wholesale dealer shall deny the complaint, a full investigation of the matter shall be made and a hearing held thereon; and if, after such investiga-

tion and hearing, the commission shall be of the opinion that the prices complained of are unjust or unreasonably high, they shall, and said commission is hereby authorized and empowered, to determine and prescribe what shall be and will be just and reasonable prices to be observed in the future by such wholesale dealer as the maximum to be charged at said place or places, and to make an order that such wholesale dealer shall in the future cease and desist from charging in excess of the maximum prices so prescribed, and such wholesale dealer shall thereafter conform to such order.

## Big Company Settles

Whittet & Traeger Auto Co., Fairbury, Neb., write: "This will acknowledge receipt from the \_\_\_\_\_ Motor Co., for balance due, for which please accept our thanks for the grand work the A. A. G. O. is doing. We feel grateful for it."

Backed by a big national power like the A. A. G. O., the just rights of retailers are being no longer disregarded.

## Sources of Supply at Right Prices.

Taylor & Sons' Garage, Mitchell, Kan. (Taylor & Sons' Lbr. & Impl. Co., Lyon, Kan.), members of the A. A. G. O., report that right prices may be obtained if they are gone after intelligently. They write:

"We have purchased the Champion X Spark Plugs for \$36 per hundred of the Sickles Saddlery Co., St. Louis, Mo., also can buy them for 37½¢ apiece of the Ford Motor Co., f. o. b. Wichita, in lots of one, five, ten, or any amount. We believe you can put your efforts to no better use than helping to locate sources of supply for garage owners at right prices."

Butler Bros., Chicago, quote 38¢, and Beckley Ralston & Co., Chicago, 40¢ for the article. Quite a range of prices.

## Competes With Railroads.

That the commercial car can maintain a regular transportation schedule in successful competition with the railroads is evidenced conclusively by the experience of the Transportation Service Co., of Richmond, Ind. This company is operating a fleet of thirteen two-ton Reo trucks, mounted on Goodyear S-V Tires. In competition with two steam railroads and an interurban line, the company is operating on a 20-mile radius, and has established a very remunerative freight and passenger business.

## Bro. Pake Suggests "Gasoline Day"

A. A. G. O., Chicago, Ill.—Gentlemen: Referring to your fight on the price of Gasoline—why not have "Gasoline Day" all through the United States and have all owners of private cars agree to let their cars remain in the garage ONE DAY IN EACH WEEK until the price declines? I believe if you would start the ball rolling, that it would soon gain great velocity and the result would be in line with the efforts made.

If you decide to adopt this suggestion, I will undertake to handle this State and bring the suggestion before the public through the leading papers.

Very truly yours,

L. J. PAKE,

Cole Motor Co., Montgomery, Ala.

What does the field think of this suggestion? Shall we take up with it?

### The Gas and Oil Question.

BY M. G. SANDERSON.

When a man is in the market for an automobile he sagaciously collects all the facts obtainable pertaining to the merits of the car he contemplates purchasing and his first move is to locate a car that is best suited to the purpose he wishes to use the car for, whether pleasure or business. After carefully comparing the different cars he selects the one that he believes is the only car that will meet his requirements. After he receives the car he goes merrily on his way rejoicing.

After completely exhausting the supply of gasoline and oil with which the car was supplied upon delivery he drives to the nearest garage and says: Fill her up

with gas and I believe that you better put in a couple of quarts of oil."

### Taking An Awful Chance.

After using all the common horse sense he possesses in purchasing a car he is willing to let the other fellow do his thinking when it comes to oil and gasoline, taking a chance on the honesty of the salesman to give him a grade of oil and gasoline that will not ruin the car that he prizes so highly.

In buying your gasoline if you insist on a high test gasoline you will get the best results in getting more mileage to the gallon and less carbon in the cylinders of the motor; and the presence of carbon is not confined to poor oil alone. Car-

bon often results from the use of a poor grade of gasoline.

Gasoline goes to the cylinders of a motor in the form of a vapor or gas which is generated in the carbureter, and if a heavy gravity gasoline is used there is bound to be little globules of heavy density that do not properly vaporize. These are sucked into the cylinders with the gas, which produce a flame instead of an explosion, thus producing a certain amount of residue or carbon. With each explosion these particles of carbon collect on the cylinder walls and the heads of the pistons. After a large amount of this carbon collects, it sooner or later causes a knock in the motor, which is a menace to its good running qualities.

### Getting the Right Grade of Oil.

There are grades of oils that will give splendid results in some types of motors, while they are practically worthless in others. To get an oil that is best fitted to a particular motor, it is generally a good policy to follow the advice of the manufacturer of the car until you become sufficiently educated to the general action of a car to know when you are getting the power and speed that the car should produce. When you are supplying the fuel for a car, urge upon your customer the idea that **QUALITY** should be his first consideration, because a low price and the best quality are not synonymous.

Do not sacrifice the life of your customer's car for the sake of a few paltry pennies you may save him on the upkeep. According to authority the best is the cheapest in the long run and experience is a mighty good teacher. Educate your customers to this idea and in the long run they will bless you for it.

## Get Busy in the Lower Gasoline Prices Movement

If garagemen ever expect to get a more satisfactory margin of profit on their sales of gasoline, they have got to **BRING DOWN THE PRICE**. The way to bring down the price is to **DO SOMETHING** more than talk. **ACT NOW!** Cut out the

petition printed below, paste it on a long sheet of white paper. Get qualified voters to sign it, and after you have secured 100 or more names and addresses (the genuine signatures of the voters themselves), send the petition in to A. A. G. O. Head-

quarters, 53 W. Jackson Blvd., Chicago, Ill., and Secretary Carr will forward same to Congressman Scott Ferris, Washington, D. C., who has taken up this fight in our behalf. Get busy, brothers, and get busy **NOW**.

# ATTENTION MOTORISTS

IF YOU ARE INTERESTED IN LOWERING THE

## EXCESSIVE COST OF GASOLINE

At the coming convention of the **American Association of Garage Owners**, to be held in Chicago, February 1 and 2, 1917, one or more of the following bills, all of which are now before Congress, will be chosen as the means of accomplishing this result: The **HOWARD BILL**, to prohibit the exportation of gasoline; the **STEENERSON BILL**, to allow the Federal Trade Commission to fix the price; the **FERRIS GENERAL LEASING BILL**, to throw open millions of acres of government-owned oil lands; and the **EXPORT TAX BILL**.

### GET INTO THE MOVEMENT

### PLEDGE

### WORK FOR THE GOOD OF THIS CAUSE

I, the undersigned, a qualified voter in these United States of America, hereby pledge my support to the bill or bills urged for passage by the **A. A. G. O.** and agree to use my influence with the senators from my state and the representative from my district to compel favorable consideration of said legislation, and I also agree to interest one or more voters in this movement.

☐ DEALER  
☐ GARAGE  
☐ REPAIR SHOP

Address.....

NAME

NAME

# A Year of Progress in National Association Work



EX-PRESIDENT PHELAN

"One year ago the A. A. G. O. as a national institution was in its infancy. Its membership was small but active, zealous, courageous and vigilant. Now, gathered under the pure and lofty banner of our organization are numbered somewhere like 12,000 garagemen, dealers and repair shop owners, to which has been added during the past three months a fine and growing constituency of automobile employees."

"One year ago our hustling secretary-treasurer, assisted by two office girls, occupied a small one-room office and did all the administrative work connected with operating the organization and issuing its official publication; today the work is departmentized and Mr. Carr has capable and responsible heads to the following departments: Organization, subscription, advertising, collection, legal, insurance, mechanical engineering, and employment-registration, and the national headquarters occupies large space in one of Chicago's most noteworthy and centrally located office buildings, with eighteen people taking part in the administrative activities and twenty-one people employed in field work, the latter covering nearly every section of the country."

"It is hardly necessary for me to enumerate the list of A. A. G. O. activities or to enlarge upon their value to our craft. You as readers of the official journal should be thoroughly informed. I desire, however, knowing as I do how busy we all are, to urge you not to delay taking advantage of every benefit your officers have labored so incessantly and doggedly to provide. They are for you and they mean money saved, money made, and helps that will compensate you many times for all efforts and cost you may expend in promoting the welfare of the Association."

—From the Farewell Address of Retiring-President John C. Phelan.

## Garage Specialization.

There is a movement on foot in various parts of the country to separate the storage from other branches of the garage and retail automobile business, on the theory that space required for storage is too expensive when the same can be used for other purposes. Therefore, storage, it is argued, should be taken care of in a separate building in locations where space is less valuable and more in harmony with the earnings.

At Bloomington and Decatur, Ill., a number of garagemen have given up the storage feature of their business.

This specialization is not new in the larger centers of population, but is an innovation as applied to the smaller cities and towns.

## Important Notice.

B. R. A. W. members should not hesitate to make full use of the legal department for the solution of all perplexing legal questions.

The world is a great mirror which truly reflects the thoughts, acts and ambitions of every individual.—Kohn.

## Our President

President E. A. De Laruelle of the A. A. G. O. is vice president and general manager of the Wells Garage, Inc., 4th and Wells streets, Milwaukee. From 1909 to 1913 he served the Buick Motor Co.'s Milwaukee branch as accountant, cashier and assistant manager; and during 1913 and 1914 he was cashier of the Jesse A. Smith Auto Co. in that city, going into business for himself under the style of Wells Garage, Inc., in 1914. He has perfected a system of cost accounting for the retail auto business. As a dealer he sells both pleasure cars and trucks, placing the big emphasis on the latter. Mr. De Laruelle was born in Green Bay in 1878 and was educated in the public schools, Dale Institute and McCunn College. He taught school three years and was an accountant in large wholesale houses before entering the auto field. He is a member of the Milwaukee Yacht Club and unmarried.

## S. A. E. Day at New York Show.

In honor of the Society of Automobile Engineers, Jan. 11 was set apart as S. A. E. Day at the New York Show.

David Beecroft, of the 1916 Meetings committee, in announcing S. A. E. day stated that the committee had recognized the importance of the affiliation of other engineering societies with the S. A. E., and had determined to make the day the greatest in the history of the organization. The 2,500 members of the society were asked to co-operate more fully in S. A. E. work.

In the evening the annual dinner of the S. A. E. was held at the Hotel Biltmore with an attendance of 750. Preceding this dinner was a one-hour reception, when the members had the best opportunity of the year of renewing acquaintance.

The climax of S. A. E. day was a performance of Ziegfeld's Midnight Frolic for S. A. E. members and their guests. The entire house had been reserved and members had been requested to bring the women although they did not attend the dinner.



# Show Manager S. A. Miles Offers a Few Suggestions to Garagemen

[Excerpt from a letter to the Secretary-Editor.]

**O**FF HAND a few thoughts come to me about garages in general. Taking New York as a sample, I should say that the first disagreeable thing that impresses an owner is their dismal and decidedly dirty appearance. Garage owners in the downtown district are, of course, so well patronized that perhaps they think it unnecessary to pay attention to this detail.

The car owner can never be quite sure that instructions he has given relative to adjustments, oiling and the like have been attended to unless he personally goes over the work himself, which means that he may as well have done it himself in the first place. This situation should be remedied. Garagemen should cultivate the quality of absolute reliability and trustworthiness.

The supply of tires known as seconds concerning which, of course, the average owner is not well posted, should never be furnished as a secret substitute for first-quality goods.

The noise which frequently disturbs people in the neighborhood of the garage should be eliminated wherever possible, and while they, the garage owners, may at the moment be quite independent of them, these things do cause ill feeling on the part of the car owner and of the public, which will in the end result detrimentally.

A thing which I think impresses careful observers is the great number of partially deflated tires seen in garages and automobile stores. This impression is distinctly unfavorable to the garagemen, and suggests the idea of neglect.

The best garage I have seen in many a day is at Springfield, Mass. The driver enters up a gradual slope and almost without appreciating it finds himself on the second floor. It is an excellent idea and does not occupy nearly as much room as one might imagine. This same garage is fitted with lockers for which no charge is made. Its supplies are apparently exactly what they are represented to be.



S. A. MILES.

## Hendee Garage, Atchison, Kansas.

G. E. Hendee, Atchison, Kansas, is content to admit the correctness of the general belief that one must go outside the borders of the Sunflower state to find a more progressive garage than his. When it comes to the credit for this excellence however, he willingly shares it with Mrs. Hendee, who is in charge of the accessory stock, does all the buying, bookkeeping and collecting and runs Mr. Hendee a close

on his pay-roll lies in the difficulty in finding the men.

The Hendee garage is on the direct automobile route between Omaha and Kansas City and his out-of-town business is constantly increasing. Perhaps there is no better illustration among garagemen of success founded on absolutely honest business methods.

The Hendees are believers in organization and were among the first in Kansas to join the A. A. G. O. colors.



second at least in the selling of automobiles.

Mr. Hendee is a practical machinist of thirty years' standing. His repair shop is equipped with all the latest appliances for repairing and machine work. All the work is done under his personal supervision. Ten competent men make up his present force. The only reason he has not more

## Brake Lining Lists Hold Good.

Considerable comment and worry has recently been caused among the accessory jobbers and dealers over the threatened adoption of a higher brake lining price list advocated by a recently formed association of Brake Lining manufacturers.

Owing to the increase in the cost of

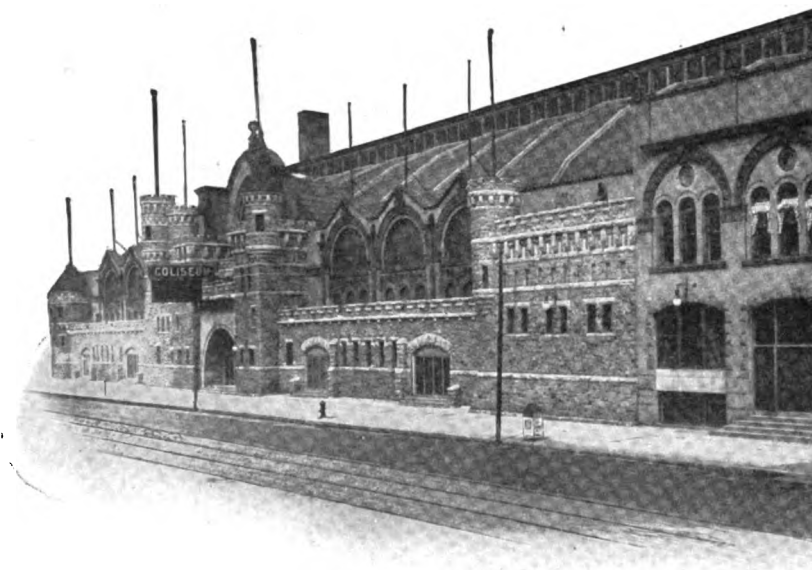
labor and the fact that asbestos reinforced with brass wire suitable for brake lining material has advanced over 200 per cent. in less than two years and it is almost impossible to secure a sufficient quantity even at the advanced prices because of the shortage of labor and a strike among the Canadian asbestos miners; this association maintains that the new advanced list is necessary and that some brake lining manufacturers have really been marketing their product at a loss for some time. Several of the largest manufacturers who are not members of this association and who manufacture more than one-half of the lining sold, while admitting that stiff advances in net prices are necessary, maintain that the new list is prohibitive, that it is not based on the cost of production, that its adoption at this time would lead to endless confusion, that the price situation can be handled by a revision of the discounts, and that the automobile public is now demanding "fair lists."

Some of the independent manufacturers have already notified their jobbing trade of the advanced prices and that they would not recognize the new advanced list as standard but would continue to use the regular "Folded and Stitched List" and the "Solid Woven List" which are now in regular use and have been looked upon as "standard" since 1906, the beginning of the asbestos brake lining industry.

# Chicago Automobile Show

THE Chicago Automobile Show begins on the morning of January 27th and ends on the evening of February 3rd.

Ninety-six automobile manufacturers and 160 accessory manufacturers will display their products in four huge buildings, the Coliseum, the Coliseum Annex, the First Regiment Armory and the Greer Bldg. Besides the main floors, the basement and gallery of the Coliseum and the balcony of the First Regiment Armory will hold displays.

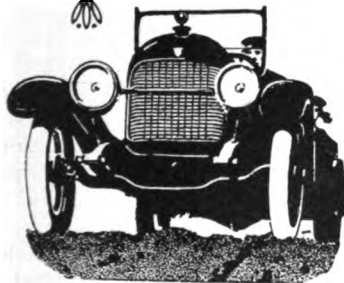


Main entrance in Coliseum, 1513 S. Wabash Ave.

To the general public the admission fee is fifty cents; one fee including all buildings. Garagemen and dealers can get tickets from manufacturers supplying them with goods.

Every inch of exhibition space has been taken, forcing numerous manufacturers to make special exhibits in different hotels and show rooms.

The 1917 New York show broke all records of attendance with more than 400,000. There will be a capacity attendance in Chicago, estimated at more than 450,000. The density of population favored the New York show, but Chicago will draw from three times as great but a more sparsely settled territory.



From a business and educational standpoint, the Chicago show will forge ahead, as more dealers will be in attendance. Already Chicago is known as the train-load show, owing to the quantity orders received.

S. A. Miles is general manager of the show, with offices in the Coliseum and the Auditorium Hotel.

A feature of show week will be the automobile salon in the Elizabethan room of the Congress Hotel, January 29th to February 3rd. Only the higher-priced types of cars will be shown. The salon also will include a display of body work by the C. P. Kimball Company.

A. A. G. O. convention February 1st and 2nd in Auditorium Hotel. Banquet February 2nd at 7 p. m. General headquarters, 342 Monadnock Building.



A. A. G. O. Convention  
Chicago, Feb. 1st and 2nd



E. A. De Laruelle,  
New President American Association of Garage Owners;  
President Wisconsin Garage Owners' Association;  
Prominent Garageman and Auto Dealer  
at Milwaukee, Wisconsin.

# The President's Message

**F**ELLOW GARAGEMEN AND DEALERS: In assuming the duties of president of the American Association of Garage Owners, I desire to extend greetings to my fellow members and to the members of our craft throughout the country.

We are engaged in a business that is yet in its infancy. Judging the future by the past, the developments will be amazing and accomplished with such a rapid succession of steps as to baffle and make impossible anything like an accurate forecast. This calls for organization and organization helps; it makes them imperative if these developments are to be attended with anything like orderly and systematic processes. Where everybody is in a hurry to keep up with individual demands, the collective work is likely to be neglected, and it is only through a strong organization exclusively representative of our retail and service craft interests that this work can be properly cared for.

The message of the retiring president, Mr. John C. Phelan, printed in our official journal, the *AMERICAN GARAGE AND AUTO DEALER*, last month, was an inspiring document. It records phenomenal achievements for a class of business men whose reputation for getting together and doing things collectively has not been up to this time the best. It shows that we are improving and that we are learning to stand shoulder to shoulder and work for the common good of our class. It shows that in our plan of organization we have at the very outset developed strong executive efficiency and have been able to do things rather than to talk about doing things. The record of activities placed in operation at National Headquarters, and the 12,000 members enrolled during less than two years' time, is something that we can well be proud of.

## Most Commendable Features.

Two features of our organization strikingly commend themselves to me, and I am sure they will commend themselves to the intelligence of our members generally and those who should become identified with us.

First, we have a strong official journal and mouthpiece, through which we can carry on our educational propaganda and reach the ear of members of our craft throughout the country at regular intervals. Our journal has shown remarkable improvements from the first issue. It now ranks with the best journals in the field and it is devoted primarily to the work of organizing, unifying and making effective the will of the retail automobile and garage trade. Secondly, it is taking part in all movements, educational and commercial, calculated to develop the business in which we are engaged and the industry of which we are an important part. Primarily it is an association organ, secondarily it is a trade and commer-

cial journal, owned and operated by retailers and for retailers.

Second, we have established administrative departments of service that, day by day, are serving our members and giving them benefits of dollar-saving value. The Collection Department has been made use of by thousands of members, converting hopelessly bad accounts into cash. The Law Department has saved individual members thousands of dollars in lawyers' fees by the adjustment of disputed claims, by advice that has prevented litigation, and by indicating to those who take advantage of our members the important fact that they do not stand alone but are backed up by a national organization equipped to make its protective care mean something.

We have an Insurance Department that is doing wonders in the way of cutting down the cost of protection from fire and all forms of casualty hazards. The first member to take advantage of the insurance work of our organization saved \$425.00 on his first year's premium. This saving will pay his dues in the A. A. G. O. 106 years. The legislative work of the national organization has been beneficent. It has stimulated widespread agitation in behalf of effective protective laws, and in nearly all of the states where new laws are needed or where old laws require amendments we are active and will push the work as rapidly as possible. The A. A. G. O. field force and official journal are backing up all of these local and state efforts with every ounce of influence at their command.

## New Activities Taken Up.

Among the new features of work taken up by the national body for 1917 is Accounting and Cost Finding, and a Department of Purchasing Information. An accurate accounting system, and a simple one, is required for the smaller garages and shops. Garage men, shop men and auto dealers as a class are not accountants; therefore, the fine points of accountancy and cost finding are of no interest to them, but a simple, practical method of keeping accounts, inventories, cash and a method of finding cost, as a means to connecting with a net profit is what the great mass of our fellow craftsmen want. The coming year will be made memorable by the work our association will do along this line, which will include up-to-date merchandise methods and the modern methods of buying and selling. A number of Local Associations, among them those in my home city of Milwaukee, have secured large benefits through locating sources of supply which operate to increase profits and protect the retailer in his sphere of activity.

One of the mistakes usually made in organization work consists of shouldering the entire burden upon a few officers. These officers are willing to work, but the work

they do can be multiplied in effectiveness and efficiency by the co-operation and support of the individual members everywhere. Secretary Carr and his staff of associates at Headquarters are doing magnificent service for us, but this service can be multiplied in its benefits and far-reaching consequences for the up-building of the members individually and the craft as a whole if all will lend a helping hand and *do their part*.

In taking up the work of the presidency of your organization, I solicit loyal and earnest support of all the members. I want you to stand with me throughout the coming year in staunchly holding up the hands of our executive force at Headquarters, putting behind them the united power and prestige, of not only 12,000 garage men, shop men and dealers, but 12,000 more that shall be gathered into the fold during the coming year. Let us make organization a part of our business. Let every thought connected with the promotion of our individual businesses partake of that element of mental activity which will include the upbuilding of the A. A. G. O. and all state and local associations that are co-operating with it to advance the cause for which all are laboring.

#### Actions, Not Words, Accomplish Results.

Let us remember that resolutions, discussions, debates, meetings and conventions of themselves accomplish little, but backed up by action, individual and collective, they bring results. Let every man of us be ready to act as well as to talk, be ready to do as well as to dare, and be prepared at all times to answer the "call to the colors" to meet any condition that may arrive, and to carry out any program adopted to further our interests.

With a paid representative on the ground at Washington, our legislative interests at the national capitol should be well looked after. Our petition campaign in behalf of lower gasoline prices should be pushed with all vigor. Sign the A. A. G. O. petitions and get them into the hands of the National Secretary as soon as possible. Congress is now in session and ready to act upon all high-cost problems. Congressman Ferris will see that our voice is heard by all of the nation's chiefs at Washington.

Attend the convention of the A. A. G. O. to be held during the Chicago Auto Show. My home city of Milwaukee and home state of Wisconsin will be there in large numbers, and I would urge that other cities, towns and states do their part to make our convention this year a record one. The show and convention combined should give those who attend information and inspiration that will represent a liberal education in the very things needed to speed up our individual businesses and make them more modern and successful.

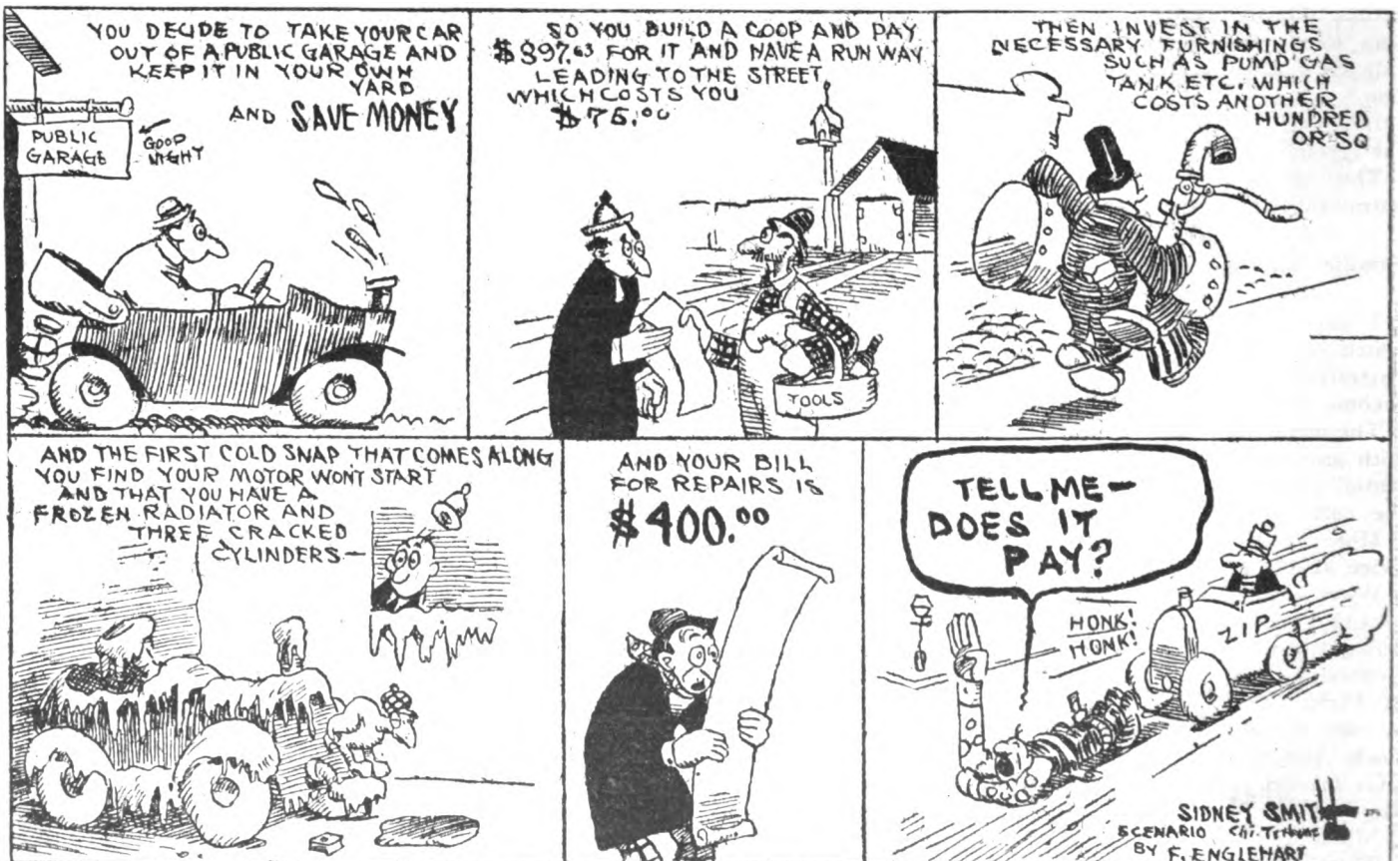
National Headquarters of the A. A. G. O. is the clearing house of information and advice for our trade. Use it freely. Send in your suggestions.

#### Taking Up the Work.

With this message of greeting, I take up the work that has been assigned to me where Brother Phelan left off, and with your co-operation and assistance I will lay it down at the end of my term of office, feeling that we have, on reaching another mile-post of our history, added to the glory and merited fame of our beloved A. A. G. O.

Fraternally,

E. A. DE LARUELLE.



Garage Efficiency by Mr. Private Owner



# American Business Initiative

## Excerpts from a Notable Address by John N. Willys Before the Association of Life Insurance Presidents, New York City, Dec. 15

*Editor's Note—This address is the more remarkable from the fact that it was delivered in New York City during the Overland Convention in Toledo. Special trains both ways allowed Mr. Willys to deliver his address in New York City without missing an event in Toledo.*



JOHN N. WILLYS

**T**HERE is no greater error in our national life than failure justly to appraise the patriotism of the American merchant, manufacturer and financier.

I genuinely believe that the hope of our country lies in the efficiency that we have developed in so-called "Big Business," and in the patriotic willingness of the men who control this efficiency to devote its full power to the safe-guarding of the nation.

Industrial efficiency in this country goes far beyond governmental efficiency.

This can be said without any lack of patriotism.

\* \* \*

### Private Enterprises and Public Benefactions.

I want to deal with my own industry which offers an especially valuable demonstration of how private enterprises may become public benefactions.

The makers of motor cars rank equally with producers of ammunition in their potential possibilities of military services to the country.

Motor vehicles in the present war have twice saved France from extermination.

When the peril was greatest, when the onrush of the Germans in September had brought them almost within sight of Paris, General Gallieni, then Military Governor of Paris, rushed troops in motor vehicles by the thousand to the aid of General Foch. They turned the tide and made possible the victory we know as the Battle of the Marne.

Motor trucks saved Verdun.

The German advance had cut the French railway connections. Horse-drawn wagons

never could have brought the supplies. Motor trucks have supplied the army for the last ten months.

Had there been no such thing as motor vehicles nothing could have saved France.

Here we demonstrate the part the motor vehicle plays in warfare.

Let Americans take hope in the immense motor car facilities we have here.

Millions of cars, hundreds of thousands of trucks, are available. They span the country. Men to drive them are plenty, for motor car popularity has developed an army of amateur chauffeurs.

In the automobile plants of our country could be produced as many more cars as possibly could be needed.

We ourselves at Toledo, for example, can produce a thousand cars a day. In time of national need our every facility would be turned over, and I say in sober earnest and with every desire to avoid the extravagant or bombastic, that if Uncle Sam needed the cars, we'd double or triple the number.

\* \* \*

### Scientific Legislation.

Legislation should be scientific. It becomes aggression the instant it attempts more than legitimate protection to the public.

Capital has shown increasing willingness to share its profits with its workmen.

Advances voluntarily made prove this. Employers of labor constantly expend huge sums toward increasing the safety and happiness of their men.

I say that the man who raises dissension, who seeks to retard this increasing accord

of capital and labor, or who seeks to handicap capital by unfair governmental restrictions, is a bad business man and a bad American.

If we steal, let them check us. If we connive against public interest, let them discipline us. Otherwise let us have full scope to develop that initiative which is the main-spring of our progress.

\* \* \* \*

Railroads and automobiles rest on the steel industry. All three would bear their immense share in national protection, yet all are individual enterprises.

I am not of those who believe that our prosperity will end with the war's end.

I think we are just getting started.

We have long had natural resources. The war has awakened us to their more efficient development.

Europe must be rebuilt after this war ends. We will have the trained men as never before. It will be our work. The profits will be ours. There is warrant only for optimism.

\* \* \*

### An Amazing Advance.

The amazing advance of the motor car industry proves what American men can do if left a free hand.

History affords no parallel. Less than two decades ago it was nothing. Today the motor car is one of the world's great agencies of progress and America leads in its production.

December 1, 1916, saw 3,352,000 cars, representing an approximated cash value of two billion dollars.

Think of the growth from 120,000 to 3,352,000 cars in one decade.

### Changes Wrought by Motor Cars.

Look at the changes the motor car has wrought in our daily life. It has bettered it in every factor, urban and rural, social and commercial.

Distance is eliminated. The city business man lives in the suburbs. He doesn't refer to distance. He speaks of time. He is not five miles away, he is fifteen minutes away. His home and his office are linked, so are his home and his country club.

The automobile is an agency for domesticity. It has rehabilitated family life. The "Tired Business Man" no longer dodges the evening out with his wife. Dinner, dance reception or theatre are facilitated by limousine or sedan.

\* \* \*

### New Values Created.

But to know what the automobile means in cash value to our country you would have to find a way to reckon in dollars and cents the increased powers that accrue to a business man as a result of bettered health.

There is no way to get this figure, but it would be enormous.

The automobile has brought about the era of the open air.

It has given golf and tennis their popularity, for it economizes the daylight hours. A man with an automobile is only minutes from golf links or tennis courts, and then only minutes from his dinner.

He plays. He gets more fun out of life. He is healthier. He is broader-minded, more human.

The automobile has taken the grouch out of business.

Here we see a great humanitarian angle to what was originally a purely commercial project. Makers built cars for profit. Public health benefited.

\* \* \*

### Universal Benefits.

The motor vehicle is universal in its benefits. It operates as profitably and beneficially for the farmer as for his city brother.

Drudgery is eliminated. The young man and woman are willing to stay on the farm. A social life once barred by distance has been developed.

\* \* \*

### An Offering of Patriotic Men.

Let us be deeply pledged to this movement, not as a matter of governmental dictation, but as the spontaneous offering of patriotic men who believe that with the privileges of citizenship come obligations, and who hold that the highest duty of every American is to do his share to pass down unswollen to the next generation the blessings of liberty that came to us from heroic forefathers.

We do not believe that wealth and success obscure this sense of obligation. We believe that greater possibilities increase the desire of a right man to serve.

# LOOK OUT

**Fraudulent Subscription Agents.**—Look out for one Fogarty, who has been doing some crooked work for some time as subscription agent for motor trade magazines. John Raffensharger, Danvers, Ill., reports that said Fogarty, who is not an agent or representative of the AMERICAN GARAGE AND AUTO DEALER, secured a \$1 subscription from him for it and promised him eleven road signs for an additional dollar. He did not turn in the order, of course. Others whom the field have been warned against are G. A. Bronson, Squire and T. Wilson, W. J. LeNoir and Glen Smeeman.

\* \* \*

**Where Are Weiss and His Car?**—Harsh & Loar, proprietors of the Swanton Garage, Swanton, O., write:

"E. A. Weiss, Marshalltown, Ia., License No. 131504 Iowa, got two 30x3½ Fisk cases, \$26.80, from us August 30, 1916, and promised to pay in ten days. Now we have written to the postmaster at Marshalltown and are advised that he has not been there for some time." Will our readers and

## The A. A. G. O. Collection Service.

### Worthy Services Rendered.

In reference to the bill for collection against Mr. ———, I wish to advise that I have been successful in effecting a settlement; therefore, you will understand that it is unnecessary to send further collection letters to him. Thanks. If I find it necessary to write you on similar cases I certainly shall be pleased to do so. I thank you sincerely for the worthy services you are offering.

—R. W. Hornug, Lavelle, Pa.

\* \* \*

### Paid Up and Still a Customer.

This is to inform you that Mr. ——— called and paid the \$18.85 and apologized for not paying before. I feel sure that you did not offend him in going after him with your collection service as he is still my customer. I appreciate this—many thanks.—Uneeda Tire & Repair Co., North East, Pa.

\* \* \*

### Gets the Money for Garagemen.

I wish to thank you for your efforts to collect our bad accounts. You have done this very successfully, failing only in one instance, to get all—this one paid part. Enclosed find six more accounts.—Long & Miller, Sturgis, Mich.

members help us locate Mr. Weiss and his car for our Swanton Garage?

\* \* \*

**Ford Car Stolen.**—O. T. Patlka, an A. G. O. garageman at Minco, Okla., advises that a Ford car was taken from his P. N. Garage, December 6. It is a 1917 model, low wind shield, small crack on lower right-hand corner of body; has a speedometer attached. Send information to Bro. Patlka direct.

\* \* \*

**Won't Pay Garage Bill.**—A. C. Blades, garageman and dealer at Crisfield, Mo., writes that Jim Ant Sterling won't pay his bill and believes he should be published as a warning to other garagemen. He refuses to pay any attention to A. A. G. O. collection letters.

## S. A. E. Dinner to Manufacturers.

Detroit section, Society of Automobile Engineers entertained at dinner 400 automobile manufacturers, the evening of Dec. 14. The dinner was given in Hotel Pontchartrain and probably will be an annual event.

D. McCall White, chairman of the Detroit section, S. A. E., was toastmaster. One of the principal speakers of the evening was Captain L. E. Goodier, Jr., of the war department, who spoke on the possibilities of an aviation reserve. Following a short speech on "Industrial Preparedness," by Howard E. Coffin, of the Hudson Motor Car company, a film on that subject was shown. Among other speakers were: Henry M. Leland, Cadillac Motor Car company; Job Hedges, one time gubernatorial candidate in New York, and David Becroft, editor of the Class Journal.

Cloud not your vision, poison not your mind nor dwarf your soul with the false imagination that the world is not giving you a square deal.

## Harrisburg, Pa., Garage Owners Organize.

The Harrisburg, Pa., Star-Independent aptly refers to the A. A. G. O. as "The Association for the Prevention of Cruelty to Garage Owners," in its report of the organization of a local branch in that city during the past month. It states that this branch "is being instituted in Harrisburg for the benefit of local automobile men," then adds:

"The American Association of Garage Owners has been organized all over the country. Its purpose is to keep garage men informed regarding their business and to act as a clearing house for all garage owners' complaints. The service will include credit information by means of which garage men may be enabled to avoid giving credit to the undeserving."

Mr. Garageman, you can't afford to miss the Chicago Auto Show and A. A. G. O. Convention, in Chicago, week of Jan. 27-Feb. 3.

# Kansas Dealers and Garagemen Organize

**Permanent Association Formed with W. H. Imes as President—  
Topeka the Headquarters—Kenyon Riddle Made Manager—  
Biggest State Meeting of the Year—A Second Meeting Called**

What's the matter with Kansas? Nothing in the retail auto field that cannot be speedily remedied from now on, for the dealers and garage men under the inspiring leadership of W. H. Imes have organized and will work with the A. A. G. O. to bring about better conditions in the

of the board, will constitute the board and direct the policy of the organization and arrange for all regular and special meetings. It is possible that Wichita and Salina will be made headquarters of two of the districts to be created.

The constitution and by-laws adopted provide that the annual meeting shall be held in Topeka in addition to making that city the state headquarters, but special meetings may be held at any place in the state selected by the directors as well as the district meetings and district headquarters. The districting of the state will be taken up at once in order that the directors from each district may be selected for the work to be done on the board.

The entertainment for the visitors was arranged by the members of the Topeka Motor Car Dealers' Association, which included a luncheon at the Chamber of Commerce and a theater party in the evening.

Telegrams and letters from similar organizations in Iowa, Minnesota, Illinois and New York were received and read,

ury. The A. A. G. O. is able to finance itself and does not ask for any support of this kind. What we want is your friendship and moral support. We will secure direct members among the Kansas garage men and dealers and in that way build up a power that will strengthen our national organization and be used to supplement and make more effective all of the work you are attempting to do as a state body.

In other words, we want every garage man and dealer in Kansas to be a member of the A. A. G. O. and your state organization and will work to that end. Members of the A. A. G. O. are usually subscribers and readers of our official magazine and through this magazine we can give the work of your state association as well as our national association effective publicity.

President Imes' report of the meeting, as sent to National Headquarters, is as follows:

We had a very successful meeting of the Kansas Auto Dealers on December 12th and organized a Kansas State Auto Trade Association. Have a charter membership of approximately 200 and the promise of probably 500 other dealers throughout the state to join with us.

The copies of the New Jersey Lien Law, which you sent special delivery, were distributed at the meeting and received very favorably. We are having copies of this printed to send to other garage owners in the state of Kansas with request that they use every influence and effort to persuade our legislators to enact this law during the coming session of the legislature.

A second meeting is scheduled for January 15th, when it is expected that the attendance and membership will be greatly increased. The Kansas brethren have gone at the job of state organization in a thorough manner and nothing but success is ahead of them. Let every Kansas auto dealer and garageman do his full duty.



W. H. Imes, President.

trade of the Sunflower state. Over 200 were in attendance and the sessions of the convention were alive with enthusiasm.

The feature of interest was the legislative discussion. It was agreed that a garage lien law should be passed by the legislature and copies of the New Jersey law obtained from A. A. G. O. headquarters were distributed. Features of other laws were also considered and definite action was deferred until later.

The officers elected are as follows:

W. H. Imes, of W. H. Imes & Co., Topeka, president.

J. S. Stover, Lincoln, vice-president.

Kenyon Riddle, of Riddle & Biddle, engineers, Abilene (afterward appointed), secretary and manager.

A. B. Kirkpatrick, of the Capital Auto Supply Company, Topeka, treasurer.

A. J. Cleveland, of the Salina Auto Company, Salina; T. M. Schecker, of Horton, and E. E. Coulson, of the Coulson Auto Company, Abilene, directors.

Additional directors are to be chosen from each of the four districts into which the state is to be divided.

The three directors elected, the four representing the districts and the president, who is by the constitution made chairman



Kenyon Riddle, Sec. and Manager.

also greetings from the American Association of Garage Owners which called forth much favorable comment. Secretary Carr, of the latter organization, in part, said:

Please extend to the dealers who meet in your city on the 12th fraternal greetings on behalf of the American Association of Garage Owners. I would like very much to be present at your meeting but my duties at headquarters prevent absence this week.

Our plan of organization does not include the "affiliation" of state and local bodies. Affiliation means that you would be required to pay a per capita tax out of your treas-

## The Perfect Day

By Bro. Kohn, of the Crown Motors Corporation, New York City.

When you've started the day with a bunch of pep

And a zest for the old ham and—;

When you've swung to work with a springy step

At the tasks of the day you planned;  
When you've pitched right in and raised merry hob

With the work that you found to do,  
With a brain so clear that the meanest job

Was easy as pie for you—

Then the feeling you have as you hit the hay

Is a feeling of great content.

And THAT is the end of a perfect day,  
Of a day that has been well spent.

# Garage and Auto Dealers' Insurance

Fill in the Inspection Statement below, completely, not partially, and let us "show you." Building must be constructed of Brick, Concrete or Cement Block. Liability Insurance may be obtained by any member.

## INSPECTION STATEMENT.

File No.....

Inspection date....., 19..... Made by.....

Name of Assured..... Business.....

Street Address of Assured.....

County..... Town..... State.....

Other occupancies ..... What is their Business?.....

Number of Floors and Use of Each.....

Brick, Tile, Concrete or Cement Block..... Elevators, if any.....

Insurance Now Carried.....

Floors, Cement, Asphalt, Wood..... Posts, Wood or Iron.....

Beams, Wood or Steel..... Ceilings, Open or Sheathed, Lath and Plaster.....

Number of Sections..... Frontage of Building..... Length of Building.....

Exposures to Building: North..... South.....

East..... West.....

Outside Protection..... Inside Protection.....

Is Gasoline Tank Outside of Building?..... Is it an Approved Type?.....

Name of System and Size of Same..... Watchman.....

Number of Fire Extinguishers and Make.....

Is the Fire Department a Paid or Volunteer Organization? .....

Name of Owner of Building..... Value of Building.....

Value of Contents Excluding Automobiles..... Is Garage Open at All Hours?.....

Present Rate on Building..... Present Rate on Contents..... Expiration.....

I hereby submit the above schedule, which is true to the best of my belief, and request a rate for Insurance.

[This information confidential.]

Name.....

# Garage Firm Saves \$425.00 on One Year's Fire Insurance Premiums Through A. A. G. O.

An A. A. G. O. Member Taking Advantage of the Association's Insurance Department Secures Eye-opening Benefits—The One Year's Saving Will Pay His Association Dues 106 Years—Name and Location Withheld for Obvious Reasons—The Association Can Also Help You Save on Your Insurance Cost

**B**ELOW we give the letter our member wrote to our secretary-treasurer, Mr. Charles M. Carr, giving his rate and detailing conditions in his locality. We came to his assistance with the result that he has saved enough to pay his dues in the A. A. G. O. for over one hundred years on one year's saving on his fire insurance premiums.

Mr. Charles M. Carr,

American Association of Garage Owners,  
Chicago, Ill.

Dear Sir: Your plan of insurance among garage owners contained in your September number is an excellent idea and the garage man will no doubt obtain great benefit from an organization of this kind. Let me suggest that after you get a sufficient number of subscribers to enter your Inter-Insurance exchange, that a co-operative company be organized among the garage owners.

We are behind a proposition of this kind and would be glad to receive a copy of the policies you are using, just merely to cover stock and new automobiles we are carrying.

We have as modern and fireproof garage as you will find in a town of 18,000 and the rate of \$7.50 per hundred which they are imposing upon us makes insurance prohibitive.

The result being we are carrying our own insurance. Our state inspector has no mercy. If he sees an open quart can of gasoline, he raises our rate one dollar. If we can be of any assistance in getting an insurance organization started, do not hesitate to call upon us.

\* \* \*

We give facsimile reproductions of the filing forms on the outside of the two policies placed in the hands of this member who stood alone in his plea for a better rate until the A. A. G. O. came to his assistance. (See next two columns.)

\* \* \*

## Here Is a Striking Example of What Organization Will Do.

The member whose policies we have just delivered to him could not get a better rate than \$7.50 per hundred on both building and contents, notwithstanding that his building was good enough to warrant a fair rating. He made every legitimate effort to get a lower rate, and in doing so complied with all requirements suggested, with no result. It remained for the insurance department of the A. A. G. O., through its special arrangements, to get a better rate, which it has done, and it stands ready to do the same for any member who is in a

similar fix and who will co-operate with the attorney-in-fact of the A. A. G. O. Inter-Insurance Exchange. We have organized two Exchanges—one for *fire insurance* and one for *casualty insurance*.

We have the machinery which has proven

Standard Fire Insurance Policy of the State of New York	
Expires	Dec. 8th, 1917.
Property	<i>Building</i>
Amount	\$ 5000.00
Premium	\$ 100.00
No. 81709 636B?	
<i>Accepting the local rate, the cost would have been \$375.00. We saved him \$275.00</i>	

effective—surprisingly so, and beyond our most sanguine expectations, and it remains for our other members to take advantage of it.

\* \* \*

## Tremendous Saving on Fire Insurance.

We can save the garage and auto dealers who are members of the American Association of Garage Owners, at the least calculation, \$270,000 a year on their fire insurance alone. This is *positive* and *sure*. We ask each and every garageman and auto dealer whether or not he desires to participate in this gigantic saving.

If you have a desire to lessen your overhead expense and put into the bank in the year 1917 your portion of this amount, you will co-operate, without hesitancy, in the plans of our insurance department.

The insurance department has contractual arrangements that will save all members who own or who are located in a brick, concrete or cement block building, not less than 10 per cent on their fire insurance premiums. In many cases it will be more, and very much more in some cases, as in the one already described in the foregoing. We have 12,000 members. The average fire insurance rate, we find after a survey of over 500 applications, is \$3 per hundred.

The average amount of insurance or values listed is \$7,500.

When we have the full A. A. G. O. membership as subscribers to our fire and indemnity exchanges, we can easily effect a saving of *not less than \$1,000,000 each year on present members' premiums*.

The garage and auto dealers' business is the only large industry which has not had an efficient insurance cost-saving plan. To be sure, it is only an infant now, but there is no time like the present to make a drive forward in the right direction. You will have the benefit and the co-operation of over 12,000 garage and auto dealers in the same direction. If each individual garage and auto dealer resolves to get in on this opportunity, other good things will come your way. In fact, they will tumble your way fast.

\* \* \*

## Here's the Plan.

We have been explaining in the columns of this department for over six months that our plan was the Inter-Insurance plan, which, in effect, means one subscriber indemnifying the other through an attorney-in-fact, appointed and acting under the authority of the Association. The subscribers to the Exchange elect each year three of their number to serve as an Advisory Committee to supervise and direct

CONTAINING THE PROVISIONS OF THE STANDARD FIRE INSURANCE POLICY OF THE STATE OF NEW YORK	
EXPIRES	Dec. 8th, 1917.
PROPERTY	<i>Contents</i>
AMOUNT	\$ 3000.00
PREM.	\$ 75.00
ASSURED	
No. 91049 636BF	
<i>Accepting the local rate, the cost would have been \$225.00. We saved him \$150.00.</i>	

the affairs of each Exchange and authorize its expenditures and investment of all moneys.

When the Exchanges are in full operation they will issue indemnity contracts of





# The Law *and* The Garage Trade

*THIS department is edited by CHARLES C. BOMBAUGH, LL. B., general attorney of the American Association of Garage Owners, and a prominent practitioner in the federal and state courts; also lecturer and writer on commercial law. When information on any legal problem connected with the operation of your business is wanted, write this department.*

## Time for Attaching Car for Repairs.

Please advise us by return mail as to what length of time we can attach a car for repairs; that is, how long after we have repaired said car we could take same.

J. M. E., Mich.

The Michigan law provides that you may detain a car on which you have made repairs any time it may come into your possession within ninety days after performing the last labor or furnishing the last supplies covered by your claim.

If your claim is not paid within ninety days after you have served the debtor with a notice of a claim of lien, together with an itemized statement of the account, you should then advertise and sell the car at public auction in the same manner and after the same notice given the debtor as is required in the sale of property seized on chattel mortgage.

In serving the debtor the law requires that the notice be served on the registered owner of the license plates on said automobile.

We believe this information will be sufficient for your use and that you can in the manner indicated enforce your claim.

\* \* \*

## Refused Shipment of Oil at Excessive Price.

On August 4, 1916, we ordered from the \_\_\_\_\_ Refining & Chemical Co., of Cleveland, Ohio., ½ bbl. lubricant to be shipped October 1st from their agent Mr. L\_\_\_\_\_. On October 1st we received statement from above concern charging us for the goods at the rate of 11 1-10 cents per pound. We then refused the shipment and they say we must pay as per their statement or stand suit.

Our position in the matter is this: We placed the order on a written contract price of 8c per pound, due sixty days from time of shipment. We have a copy of the contract signed by their representative. Must we accept these goods under these conditions?

H. B. C., Wis.

You did perfectly right in refusing to accept oil billed to you at 11 1-10c on a written contract which calls for an 8c price. If you have a written contract and the price of 8c is stated therein, your defense is absolute. As you did all your business with their agent, Mr. L\_\_\_\_\_, they acknowledged him as their agent by shipping the order you placed through him. If you desire you can purchase the same quality in the open market at the best price

and hold the Cleveland Company for the difference between the contract price and the market price.

It would be well for you to send in this contract and the statement, so that our Law Department can take the matter up for you with the \_\_\_\_\_ Refining & Chemical Co. A letter from the writer on the association stationery would indicate to them that you cannot be brow-beaten into paying something that is not right, because you do not stand alone but have a powerful national association back of you to see that you get justice.

## A. A. G. O. Vice-President Earle Says:

As one of the recently chosen vice-presidents of the American Association of Garage Owners, I shall exert myself to merit this unexpected honor during the term of such occupancy. While our association is young in the automobile field, yet we are the only real association in existence which has the welfare of the garagemen and automobile dealers at heart, being an association for mutual benefit and not for ulterior and foreign purposes as is all too often the case.

If we can bind together the entire garagemen and auto dealers of America in one strong association, guard their interests, promote their cause and elevate the standing of the repairmen, we certainly shall then have accomplished a great work which is so vitally linked with the entire public.

To my mind, the fake garagemen and auto tinkerer belong to the past; we are now building a sound and permanent business, on the association end of which strenuous and hard work confronts us. We have the assurance that our cause is founded on the principles of right and justice, and therefore success is sure to crown our efforts.

## Right to Carry Passengers, Collecting Repair Bill, Etc.

Will you please give me information on the following questions:

1. Have I any right to carry passengers on my own car without a taxi license?
2. Can I pay the garage license fee now for the next year?
3. If I make repairs on a car, and

the owner uses it two days, and after he takes the car to the manufacturing company for repairs the same as those I did for him and something else, can he make any claim against me for the repairs furnished by the manufacturing company, or not?

4. If I liveried a car from the garage to the customer's residence without charging anything for the same, and something happened on the road, who is responsible for the accident on the insured car, and who for the uninsured car?

5. What right have I against the man who does not pay his storage rent after I sent the bill twice and he is behind for the rent two months? Can I make him take out his car?

6. Will it pay to insure my car against accident, fire and theft?

P. P. K., Illinois.

Answering inquiry 1, will say that you have the right as a garage man to carry passengers in the same way that a liveryman would do, but if you go into the taxi business you would require a taxi license; that is, if you run a regular taxicab or motor business, you would have to pay a license covering that sort of business.

2. The city would no doubt be glad to receive garage license money in advance for next year and receipt therefor.

3. The owner of the car would have no claim against you unless he could prove that the repairing you did was worthless and had to be done over again. This would be difficult to do, as undoubtedly you could as easily prove to the contrary.

4. If you drove a customer's car to his residence from your garage without charging anything, the question would be whether or not you were acting as his agent. If you were so acting, you would not be responsible for an accident. If you were acting for yourself and driving the car to his residence was a part of your service for which he paid in a lump or as a whole, you would be responsible. If the car is insured, the policy protects the insured, in both cases.

5. If the car owner did not pay the storage rent on his car, you could order him to remove it if you wish to do so, and if he failed to remove it, in Illinois the only thing you could do would be to sue the car owner, get judgment and levy execution on the car; you would not have a lien on the car for storage and could not proceed to collect under any supposed lien such as storage warehouse owner has under the statutes.

6. Every garage man and dealer should insure against accident, fire and theft unless the rates are prohibitive. The A. A. G. O. has an Inter-Insurance Exchange

**Insurance not a bugaboo any longer, see pages 25-26**

and can save you a considerable percentage on the cost you would have to pay regular companies. Eventually through co-operation of our members we can save one-half to one-third of the cost. Insurance blanks are furnished members on request. On the return of the blanks properly filled out the Insurance Department can state the exact saving which can be made for you.

\* \* \*

### Interesting Connecticut Case.

Compensation Commissioner Geo. B. Chandler of the First Connecticut District has been sustained by the Superior Court in his award of \$5.00 a week for 312 weeks (\$1,560.00) to Mary Elizabeth McNamara and David E. Greenberg. The respondents conducted an auto livery. McNamara's son, John, worked for them as a driver and while carrying a passenger at night ran into a tree that had fallen on the road and was killed. Miss McNamara was his sister and had been partly supported by her brother. The question of appeal was whether the partnership was a legal equity. The compensation law prevents members of an employer's household from obtaining compensation for injuries for themselves or their dependents. The question was whether the household clause applied to young McNamara, who, without question was an employee of the partnership.

\* \* \*

### Holding Car for Repair Bill and Charging Storage After Job Is Completed.

**Question.**—There is a business man in this town that owes me the sum of \$50 for new parts and repairs on an automobile that I did work on. This man hasn't a very good reputation for paying his bills—he is somewhat dishonest—so I refused to give him his car till he paid the bill. This man's wife has all the money that they own and he skins everybody he can. The party agreed to give me \$25 and pay the remaining \$25 as soon as he had a little change to spare. He says if I don't give him his car he will take the case to law. I told him to go ahead. This garage bill of \$50 is very reasonable according to the new parts furnished and amount of work we did on this car.

The car was brought to my garage about Oct. 25, 1916, for repairs. As conditions are I am going to charge storage for the car from the time the work was completed. Now I would like to have you inform me if I am doing right, or am I in the wrong?

X. Y. Z., Michigan.

**Answer.**—Under the Michigan law you have a lien for ninety days after the repair work has been done. You therefore have some time yet in which to enforce your lien under the law by having the car sold and your claim paid out of the proceeds.

If the man's wife is responsible financially you will be safe in taking the man's \$25.00 and his note for \$25.00 signed by his

wife and himself. If he and she are unwilling to do this, it would be quite evident that they intend to beat you.

You can charge storage at your regular rates and collect it for the time you have stored the car after the job had been completed.

\* \* \*

### Slow-Paying Customers: Can We Hold Their Cars?

**Question.**—We have several customers who are very slow pay and we are thinking of taking severe means to collect our accounts from them. Would it be legal for us to hold their cars until they pay their bills or, in other words, could they at any time claim their cars without paying their bill, and would we be forced to collect them in the ordinary legal way?

W. N. S., Illinois.

**Answer.**—Hang on to the cars until the owners pay their bills, unless you are served with writs of replevin by an officer of some court.

The garage owner under the very poor law that we have in Illinois has no lien on a car for supplies furnished or storage. He has a lien for repairs. In any event, do not surrender the car until the debtor pays his bill, unless served by a writ. If served by a writ and the car taken, you then have the right to appear in court when the case comes up and endeavor to convince the judge that your claim should be paid. In the event that you lose, the court costs, which should not be large, will be taxed up to you.

### Legal Notes.

This department has recently had an inquiry regarding a dispute with a lubricants company over the purchase of lubricant and paying therefor by delivering a certain automobile. There was a written order covering the transaction and when the lubricants company took the matter up with the garage owner, there had apparently been some alteration of the written order, which materially affected the terms of the order. This being true, the garage keeper cannot be obliged to carry out the provisions of the contract as altered. In addition to that, the contract was entirely executory; that is, neither party had taken any steps to fulfill the contract, and if either party desired to breach the same, the only recourse would be an action for damages, and under the circumstances the amount of the damage would be very small.

A letter has reached us from Minco, Okla., regarding what action should be taken to enforce a claim for work done on a car amounting to \$12.20 when the owner of the mortgage took possession of the same from the garage keeper by replevin. We believe it advisable to appear at the proper time in this action, setting up the lien for work done upon the car and try to induce the court to allow a first lien for such repairs. Ordinarily it would be better to have a local attorney take care of such matters, but in this instance the amount is small and unless some attorney will undertake it upon a contingent basis, it would hardly warrant the employment of counsel.

### Work of A. A. G. O. Official Publication "Great"

I regularly read your publication, and I want to compliment you on the good stuff that you put out.

Your work along educational lines to garagemen is great. We are doing what we can, in our small way, to accomplish the same thing.

C. E. Jackson, Jackson Motor Supply Co., Pittsburg, Pa.

### Why Not License Automobile Mechanics?

Milwaukee garagemen are suggesting that the A. A. G. O. consider the advisability of urging the adoption of a state license system for garage mechanics similar to the one in vogue in the medical, pharmaceutical, dental and veterinarian professions and the barber and other trades, the principle involved being that the public welfare demands qualified and certified service. The car owner does not want his car tinkered by a slipshod mechanic; he wants it repaired by an expert automobile machinist, and the question arises, should not the state have a board of examiners and hold regular examina-

tions, issuing certificates to those only who have been proved efficient and capable as the result of an examination?

The A. A. G. O. now has a bureau of registration for automobile mechanics, registering and issuing cards to only those who have been able to qualify in the matter of competency and reliability. This is a step in the direction pointed out by the Milwaukee men, and adds interest to the query, why should the state not take a hand in providing qualified help in the interest of public safety and sound public policy?

The A. A. G. O. is to give this matter serious consideration and action upon it may be taken at its coming national convention.—*Milwaukee Journal*.

# Two Opinions on New Jersey Law

## Chances Favor Its Constitutionality— Better Than Any Other in Its Protec- tive Feature—Well Worth Fighting For

### MUCH MIXED LIEN SITUATION IN NEW JERSEY.

Editor Motor World—Basing my authority upon the power placed upon garage owners by the passage of the law entitled, "An Act for the better protection of garage keepers and automobile repairmen, Chapter 312, Acts of the One-hundred and thirty-ninth Legislature of the State of New Jersey, Session of 1915," I caused to be seized from the position it had been left in by the debtor, on the main street of the city of Salem, N. J., an automobile against which I had a claim for repairs, services and balance due on original purchase price which repeated efforts had failed to collect.

Debtor retaliated by having a writ of replevin issued for the release of the car and caused the arrest of myself and employee upon the charge of theft of tools, etc., contained in the car, which belonged to others.

I have been advised that this law is considered unconstitutional and that a former case has been settled out of court upon the advice of counsel, but in favor of the debtor.

Will you please lend your assistance to the end that the proper Trade Associations, or other organizations, may be enlisted for the purpose of making a test case of this and advise me at once what are the proper steps to pursue to gain this end?

I am in a position to obtain financial subscriptions from the majority of garages in this section if necessary, but desire the case handled by one of the trade organizations, if possible, in order to carry it to the higher courts and have the decision be a final one, which will protect all the garages and repairmen in the state.—George D. Jaquett, Salem, N. J.

I believe there is a Newark Automobile Trade Association, and if you write to the Bonnell Motor Co., Newark, N. J., they will be able to tell you all about it. If you prefer you can get in touch with Z. R. Zacharias, Secretary of the Seashore Automobile

Trade Association of New Jersey, at Asbury Park, or address John H. Flett, of the Automobile Trade Association of Atlantic City.

I will write all three of the above, enclosing them a copy of your letter. I am afraid that you are correct in your fear that the Jersey lien law will be held unconstitutional when it is tested out.

This law has been a source of wonder to attorneys and persons familiar with law ever since it was enacted. The prevailing opinion has been that it was unconstitutional because it was a taking of property without due process of law. Last year, when the New York garagemen tried to have a similar law enacted at Albany, on appearing before the Legislative Committee, I found all sorts of opposition to a law of this character.

The members of the Assembly Committee before which I appeared set up that it would incite riots and breach of the peace, and that it was very objectionable and probably unconstitutional because it made no provision for the giving of personal notice to the owner of the car or to the holders of other liens, and further that no provision was made for paying other claims as the balance of the money remaining after the sale was to be returned to the owner.

On seeing the clause *if the balance was not claimed by the owner within 30 days it should be turned over to the overseer of the poor*, the New York legislators cried "confiscation," and refused to consider it any further.

New Jersey garagemen would do well to get together and prepare to have a new lien law introduced in the Legislature if the present one is to be tested out or else they will be left without any at all. I would suggest that they adopt the draft put before the New York Legislature last year, which bill is fair to the owner, the garagemen and the holders of other liens, and gives greater rights than any bill enacted up to the present time with the exception of the present

Jersey law. The bill I speak of is the following:

**LIEN OF GARAGE KEEPERS, AUTOMOBILE REPAIRMEN OR BAILEE OF MOTOR VEHICLES**—All persons or corporations engaged in the business of keeping a garage or place for the storage, maintenance or repairing of motor vehicles as defined by Article 11 of the Highway Law, and who in connection therewith store, maintain, keep or repair any motor vehicle or furnish gasoline, accessories or other supplies therefor at the request of or with the consent of the owner or his representative, whether such owner be a conditional vendee or a mortgagor in possession or otherwise, have a lien upon such motor vehicle and any part thereof for the sum due for such storing, maintaining, keeping or repairing of such motor vehicles, or for the furnishing of gasoline, accessories or other supplies therefor, and may detain such motor vehicle at any time against such owner or mortgagor until such sum or sums are fully paid.

Any persons or corporation acquiring a lien under the provisions of this section shall not lose such lien by reason of said motor vehicle or part or parts thereof being removed from the control of the person or the corporation having such lien. The lien of such bailee, garage keeper or repairman shall continue and extend at all times to his right of possession of such motor vehicle or parts thereof against such owner or mortgagor until such sum is paid. In case a motor vehicle or any parts thereof are removed from the possession or control of the person or corporation having such lien, such person or corporation or bailee may, by an action in replevin brought pursuant to the provisions of the Code of Civil Procedure, retake possession of the same from such owner or mortgagor wherever found, and in such action he shall have the amount and validity of his lien passed upon, determined and enforced.—Geo. F. Kaiser, Law Editor, Motor World.

### Comment on New Jersey Lien Law and Mr. Kaiser's Views by C. C. Bombaugh, General Attorney A. A. G. O.

There recently has been considerable discussion regarding the New Jersey Lien Law, and various opinions have been expressed by attorneys who have had occasion to look into the question of the constitutionality thereof.

In the opinion of the writer, this law is, in one regard, rather unusual; this referring particularly to the provision providing that the garage keeper or "person having a lien, may without further process of law, seize the motor vehicle or part or parts thereof wherever the same is or are found within the state of New Jersey." This particular portion of the law may perhaps eventually be held unconstitutional, because it might be considered that the property rights were being taken away without due process of law. However, it is the policy of law to uphold the enactments of the legislature if there is any possible way,

of so doing, and it is also true that certain portions of the law may be held unconstitutional without affecting other portions thereof, and in the event of a contest, this particular portion of the law may be held unconstitutional and the rest of it constitutional and enforceable.

The effect of holding that particular portion of law unconstitutional would be that the garage keeper would be obliged to retain possession of the car or motor vehicle until all claims are paid. I believe that the several associations interested in the automobile and garage trade should get together and make a test case and have the doubtful question regarding this law settled once for all.

*The law as a whole has so many features valuable to the garage owners that they should make a determined effort to sustain the entire act if possible.*

The writer's information is that the act was prepared by two of the ablest lawyers in New Jersey and they had in mind the protection of the garage owners without having to go to the trouble and expense of law suits to enforce just claims against unwilling and dishonest debtors. It is not without the range of possibility that the Supreme Court of New Jersey would, in keeping abreast of modern times and inventions, declare constitutional that particular paragraph of the law which seems objectionable.

The old common law right of a landlord to distrain for rent is still in force in the majority of the states, some with statutory modification, while in but eight or nine states has this right by statute been abolished.

In distress proceedings the landlord, without other process than his own war-

rant, either himself or by his agent seized the property of his tenant and proceeded to sale. In most of the states the statutes require that within a reasonable time after the levying of the distress warrant certain proceedings be taken in court.

This mode of enforcing the landlord's claim for rent has been held constitutional and not the taking of private property without due process of law. If a landlord can, without other process than his own warrant, seize the debtor's property, why, then, cannot the legislature by proper enactment give similar privileges to a garage keeper, such as the law makers of New Jersey have done? I, therefore, say that while the particular section of the law is unusual, there is reasonable ground for believing and expecting, with the tendency of the courts to uphold legislation, that the entire act of New Jersey will be held valid.

*If eventually it becomes necessary, an amendment can be made to the law giving the garage owner a right to re-possess the motor vehicle by an action of replevin (instead of "without further process of law"); and in that action have the rights of the parties adjudicated, and if the claim is not paid the vehicle be sold as provided by the act.*

Some objection to this law has been made because it made no provision for giving personal notice to the owner of the car or to others claiming liens. The objection seems without great force, and if such provision was included it would effectually preclude the enforcement of the garage keeper's lien for the reason that many times the owner cannot be found and, further, it would be impossible for the garage owner to know who might have liens on the motor vehicle and therefore could not give personal notice to them.

### New Jersey Leader Says State Lien Law Will Be Defended.

The following correspondence anent the New Jersey garage lien law and recent occurrences which tend to discredit it will be of interest to the field:

Chicago, December 21, 1916.

Mr. F. A. Brodhead,  
Pres. Automobile Trade Ass'n,  
Atlantic City, N. J.

Dear Mr. Brodhead:

I have been advised that George D. Jaquett, a garageman at Salem, N. J., has had some trouble in enforcing his lien against a debtor under the New Jersey law and that one of the motor trade journals has branded the law as "a source of wonder to attorneys and persons familiar with the law" thus giving currently the idea that the law is unconstitutional and should not be relied upon by the garagemen of your state for protection.

I am inclined to think that this is a very pessimistic view and one not concurred in by the garagemen of your state.

You will remember that last April you wrote us, sending us a copy of the law and stating among other things that "This law has frequently been attacked in the courts but has always won out and the garageman has succeeded in getting his money."

I have written Mr. Jaquett stating that

our association would place at his disposal the Law Department of this organization and in other ways aid him, with the help of other New Jersey garagemen, in making a fight in behalf of the law.

Please let us hear from you, as we want to be of the greatest assistance possible in this matter, and do not want the law to be prejudiced in the minds of the public or the trade by legislative sharps who may be opposed to the law more on the ground that they did not have a hand in the making of it than for any other reason. I think that the Atlantic City Association will feel about the law and a proper action to sustain it much as I do.

Thanking you for a prompt reply and wishing you and your fellow Jerseyites prosperity and success, I remain,

Fraternally yours,  
C. M. CARR,  
Secretary-Editor.

Atlantic City, N. J., Dec. 26, 1916.

C. M. Carr, Sec'y-Editor,  
American Association of Garage Owners,  
53 W. Jackson Blvd., Chicago, Ill.

My Dear Mr. Carr:

Attention your letter of Dec. 21 regarding the case of Geo. D. Jaquett, of Salem, N. J.

This matter is being taken up by our local association and they have written Mr. Jaquett for more detailed information regarding his bill and a complete description of the method that he used in going about the collection of same under the lien law. After receiving this information, our Association will then know what action to take. I will present your letter to the next meeting of the Association which is to be held Jan. 9, 1917, and no doubt you will hear from the secretary regarding the matter. I feel safe in saying that if Mr. Jaquett is a straight, clean garageman and has a clear case that our Association will promptly give him all of the assistance that we are able to give, which will amount to a good deal.

I am glad to see that you have sized the matter of this lien law up about right. The lawyers do not like the law, for the reason that a garageman is able to collect his bill, if he is "on the job" without the aid of the lawyers and just as well as they can, hence the lawyers do not get any "rake off" out of the collection of garage, repair or accessory accounts. I hear reports almost every week of accounts collected throughout the state under this lien law that have been uncollectable before, and now feel safe in saying that I believe \$150,000 would be a conservative estimate of the money that has been collected under this law since it has been in force.

As to the constitutionality of the law, that has never been determined in any court, and until there is an opinion given the law is constitutional and just as strong and binding as any other law on the statute books. I would very much like to have the name of the motor trade journal that said the law was "A source of wonder to attorneys and persons familiar with the law." These trade journals have slurred the garagemen about long enough and I, for one, would like to tell a few of them something that they evidently don't know at the present time.

I will say for your information that this lien law was drafted by one of the leading lawyers of the state, who is a personal friend of the writer's and was presented in the assembly by Mr. Carlton Godfrey, speaker of the House, who is himself one of the brightest lawyers that we have in New Jersey. Mr. Godfrey is also a friend of the writer's. It was drafted by them with the end in view of enabling the garagemen to collect their bills without having to go to any legal expense. The law is all right, and should the occasion arise, we propose to de-

fend it with the very best counsel that can be obtained in the state.

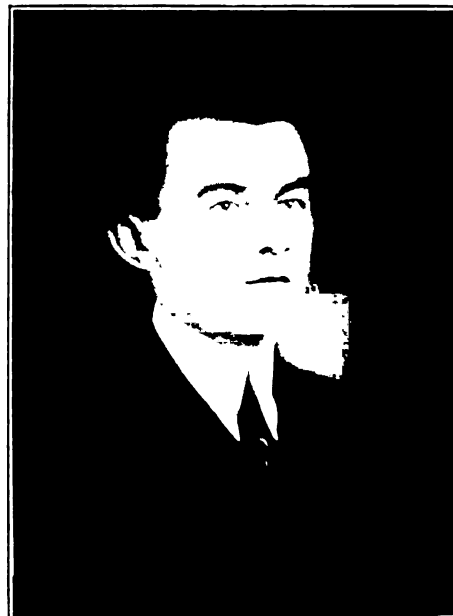
I thank you very much for the interest that you have displayed in this matter.

Yours for Garage Service,

F. A. BRODHEAD,  
Former Pres. Atlantic City A. T. A.

### Why Chambers Made Good.

Joseph C. Chambers Clifton Forge, Virginia, is on the sunny side of thirty, but already has educated himself to hold almost any position in the automobile industry. Graduating from high school he took a course at the Virginia Polytechnic Institute and followed this with technical training at the New York School of Auto Engineers.



Joseph C. Chambers.

Following these courses of study he worked for a year in the shops of the Locomobile Company and then for a short time was salesman for the Overland Sales Co., of New York. Practical work appealed to him however and he took a position with the Burgess Electrical Co., Bluefield, W. Va., as manager of their garage. He bought this garage and operated it until October, 1912, when he sold it and opened the Virginia Garage, Inc., in Clifton Forge, Virginia. Last year he sold the garage, but remains with it in charge of the shops.

Mr. Chambers was vice-president of the Associated Garages of America when that organization was in existence and is now a booster for the A. A. G. O.

During 1916, the Virginia Garage Co., Inc., has sold about fifty cars, in a territory that had about been given over to curb brokers and the usual demoralization in prices. This condition was overcome by the Virginia Garage Co. selling popular cars and always having them on the floor ready for instant delivery.



# Taking Book Out of Bookkeeping

## Second Article in Series Showing Details of an Automatic System for Garagemen and Auto Dealers — Keeping Accounts with Checks

By CARL H. FAST

Director of Cost Finding and Accounting for A. A. G. O.

### PART 2.

#### The System Needed.

The simplest and most efficient system of controlling accounts for a garage is one that will show the proprietor each day and each month the following facts:

#### Retailing Department.

Approximate amount of inventory, or saleable goods on hand.

Sales made this month compared with the same month last year.

Approximate gross profit on the sales made this month to date.

Retailing expense for the month to date.

Purchase possible, meaning the amount of purchases of new stock which can be safely made at any time without over-loading the stock or slowing down the "turnover."

Approximate net profit on the sales made so far this month.

Any increase or decrease in cash capital and profit or loss for the year to date.

The amount of outstanding bills payable and bills receivable.

#### Service Department.

The total volume or price of service work on jobs done or ordered to be done for the month or to date.

The expenses incurred on service work to date.

The total cost of materials on work done, to date.

Profit or loss to date.

#### Installing a System.

Such a system can be installed and carried on very simply, but a little trouble and thought will be necessary at the beginning in order to assure reliable knowledge from its results.

As a garage business is divided into two departments or kinds of business, and the net result of each department is desired, it becomes necessary to treat each separately up to where it becomes merged with the general business funds or accounts. In this article we will treat first of the Retailing Department. The Service Department will be handled at the conclusion, and at the same time the two departments will be merged to show the net total results of the business.

Both the capital represented and the income of the business must first be separately estimated and figured as between the retailing and the service end,

EDITOR'S NOTE.—This description of the Graficount case is made much more understandable by realizing that the whole procedure is the same as the transfer of checks in a game of chance.

Suppose five friends sat down to a session of the old army game. Suppose a sixth friend, an expert accountant, were to keep track of every transaction by means of double-entry bookkeeping. How long before that game broke up in a row? But the five friends each buys a given amount of checks which pass between the players and at the end of every play each player can tell exactly where he stands.

Even so in the Graficount, except the checks pass from compartment to compartment in the case. When the player has no checks left, he—well, you know. When the garageman has no checks left in capital compartment he must see his banker. Figures in a book may not be convincing. The lack of checks needs no argument.

Read the article with the above in mind.

so that the results will show clearly the expenses, costs, profit or loss on either end of the business, its retailing side or department, and its service or mechanical side. To do this, make separate items of the following:

#### Retailing Department.

"Take Stock," preferably by counting all the goods, accessories and materials you have for re-sale and noting their values, both at the price you paid for them and at your selling price. Disregard any cash discounts which you have obtained, since discounts are like interest on cash and are not retailing profits.

Figure your total average gross profit on the stock. See what percentage of the sales price of the goods. You have to figure your expenses as a percentage of your sales, so that is the only way to figure profit percentages to get intelligent comparisons.

Next look up the sales made last year for each month. This means sales of merchandise only, and if only the rec-

ords of your total combined service and merchandise business have been kept, estimate as carefully as possible what portion of this represented sales of goods. Making separate lists of the sales items of a typical month or two will give the approximate proportions.

Figure the total goods now "on order."

Apart from the bills payable, bills receivable and equipment inventory facts of the business, its retailing system can now be installed.

#### The Graficount Case.

As the illustration shows, this is a shallow box or case provided with a lid and catch. It is divided into thirty-five compartments in seven rows of five each. In this case the movement of money-tokens or checks of different denominations or value will record and reflect all the movements of money, in self-balanced, double-entry accounts.

Each vertical row may be said to be a column, carrying the month's records of retailing business, and embracing six months of such accounts in the six rows of boxes shown. In each column, the top box is used to hold checks which will represent the "Expected Sales" for that month, based on the estimated or the actual figures of merchandise sales in the same month last year. The box below that is used to hold checks representing the gross-profit averaged on sales as they are made, while the third compartment down is used to hold checks recording the expenses paid for retailing purposes during that month. The fourth row down is used to hold checks in the boxes respectively for "Purchase Possible," "On Order," "Retailing Profit or Loss," "Service Profit" or "Loss," "Bills Payable," "Bills Receivable," and "Cash Capital."

The use of the last box in each of the three top rows, labeled "Job Prices," "Materials," and "Service Expense," will be described later in the system provided for the service end of the business. The bottom row of boxes is used, as shown, for "Check Supply," meaning the reserve supply of checks or tokens with which all of the accounts in the various boxes are kept.

#### The Token Checks.

These are in different colors, each printed to indicate a different denomination of money, ranging from 5c up to

\$500. In posing items, any odd cents, as a fraction of the item, are figured as follows:

Where the amount is 3c or more it is counted as five cents. Less than three cents not counted. If eight cents or more it is counted as ten cents, etc.

#### Guide Checks.

These are of white cardboard and contain blanks in which, for purposes of record, amounts can be written to use as a guide or for future comparisons. The forms provided are "Due," and "On Hand."

#### Installing the Retail System.

Any retail business, to be successful, must use its merchandise, capital or credit, as represented by the stock on hand, so as to make sales, each month, large enough in volume and at sufficient average gross-profit to cover its operating expense and leave a satisfactory net profit. To do this intelligently requires that the monthly expense, as an average throughout the year, shall be first computed. In the case of a store this is a simple matter but with a garage the total retailing expense must be separated as accurately as possible from those expenses incurred by the service-end of the business, repairs, washing, storage, etc. To separate the salary of one person, who may both sell goods and render service work, is a difficult matter. In the beginning, therefore, it is best, as a simple matter, to make a lump total of all the operating expenses, such as payroll, rent, light, etc.

Next, if you have a record of last year's sales of goods as distinct from the total service business done, you can divide the total operating expense into two lump amounts in the same proportions as the retail sales and service sales. Assuming, of your total business done last year, you can estimate that 40 per cent represented merchandise sales and 60 per cent the service work, then the merchandise end of the business should be charged with 40 per cent of your total fixed expense, the remainder being charged to the service end.

Next, note on white guide checks, "On Hand," the amount of merchandise sales made or estimated for each month of the six months for which you are to use the outfit. Write the name of each month on the celluloid at the top of the case, as shown in the diagram, and place the respective guide-checks in the top boxes.

Having decided what per cent of gross-profit, as an average, your sales should show, you are provided with colored-money-checks on the back of which is that percentage of the amount on the face. For example, suppose you found you must average 35 per cent gross-profit on sales; you would be supplied with a "35 per cent series" of

checks. On the back of the \$1 check would be stamped 35c. On the \$5 check \$1.75, and so on.

Next, take enough money-checks to equal your stock on hand at its retail valuation or sale price. When you have counted this amount of checks out, they represent your present stock, which must be turned into money. Place in the first of the top boxes, representing the first month of the system, enough of these stock-checks to equal the amount of "Expected Sales" noted on its white guide-check. Repeat this with the second month and the third, or as long as the stock-checks hold out. In the last box you will not have enough

ceivable." Next, figure up the total cash capital which you have available in bank and in the cash drawer. Note the amount on a white "On Hand" check and place it in the "Cash Capital" box.

#### Posting the Retail Business.

To carry on the Graficount retail system, it is necessary to keep each day a record of four leading facts as they occur. These are:

**Total Sales:** This includes charge, cash or C. O. D. sales. (A sale is a sale whenever the merchandise leaves the seller's possession.)

**Total Purchases:** Meaning the total amount, without deducting cash discount, of any goods which have arrived

JAN.	FEB.	MAR.	APR.	MAY	JUN.	
• Expected Sales						Adj. Prices
• Gross Profit						Material
• Expense						Service Expenses
• Purch. Pass.		On Order	Profit or Loss	Bills Pay.	Bills Rec.	Cash Cap.
		Retail	Service			
CHECK SUPPLY						Equip. Inv.
						Ret. Pending

Graficount Compartments.

checks to equal the amount of expected sales. Here you learn a very important fact, the period of your stock turnover. In other words, assume that the stock checks are enough to supply with their sales-quota the "Expected Sales" boxes of the first three months and leave some over for the fourth. This shows you that your "turn-over" period is three months and a fraction. From this you can compute your annual stock turnover, if you wish.

This is a very important thing to watch in successful retailing, because most retailers have no idea how often they are turning over their merchandise capital and are carrying heavy, inactive stocks.

Next, look up the total amount of any outstanding orders for merchandise which you are buying for re-sale. Note this total amount on a white "On-Hand" check and deposit it in the box in the fifth row marked "On Order." next, figure up the total amount of your outstanding "Bills Payable," note the amount on a white guide-check and place it in the "Bills Payable" box in the fifth row. Repeat this with "Bills Re-

and the bills for which have been checked up as correct.

**Total Expenses:** Meaning any item of expense, whether paid, cash or charge, for that month's operation.

**On Order:** Meaning the total amount of goods which have been ordered for stock during that day. These four leading facts must be kept track of each day, so that, at the close of the day, or first thing next morning, they can be "posted" in the Graficount. A cash or sales register is desirable to keep track of the total sales, while spindle files can be used, one for checked-up bills or other vouchers of purchases and for carbon duplicates of orders given. (A copy should be kept of every merchandise order in any business.) Use another file for any bills or memorandum of items of expenses which may be paid during the day.

#### Moving the Checks.

**Posting Sales:** Knowing the total amount of the day's sales, take this amount of checks from the "Expected Sales" box at the top of the case. On the reverse side of these checks, at the top, will be seen the figures, which,

added together, show the gross profit of those sales on your average percentage. (If you wish to figure this percentage directly do so with a Fast Calculator, which figures all percentages automatically.)

Deduct this amount of checks from those representing the day's sales, placing them in the box below "Expected Sales" and labeled "Gross Profit." The remainder of these sales-checks represents the merchandise-cost proceeds of those sales, or the amount of your merchandise-capital which has thus been released and is available for the purchase of new goods. Place these checks in the box labeled "On Order," if there is any white guide check there, showing the amount of goods now on outstanding orders. The merchandise-cost portion of all sales should be placed in this box until they equal the amount of goods shown to be on order. After that, further checks should be placed in the box labeled "Purchase Possible."

**Posting Expenses:** Make a total of all the bills or memoranda showing expenses incurred that day and move checks to this amount from the "Gross-Profit" box to the "Retailing Expense" box directly below it. All expenses have to be paid out of gross-profits and must be kept within the amount of gross-profit shown by the sales made.

**Posting Purchases:** Make a total of all the goods purchased, as shown by checked-up bills or invoices, or any other memoranda of purchase and take checks to this amount from the "On Order" box. On the backs of these checks will be seen at the bottom, the amounts which, if added to them, will "mark-up" those purchases so as to show the standard percentage of gross-profit. Take fresh checks from "Check Supply" to the amount of this mark-up and, together with the last month which contains checks, repeat this with all purchases until the checks in this latter box equal the amount of "last year's sales" noted on the white guide check there. Then such purchases and mark-up checks, representing new goods at their retail or selling-price value, are placed in the top box of the next month and this process is continued throughout.

Post new merchandise orders by putting corresponding new checks in the "On Order" box.

With this posting continued daily it will be seen that the progress of the business can be watched in the sales made at any time in the month compared with the total sales needed to equal last year's business, the amount of gross-profit earned on sales made is seen from day to day, the amount of expense incurred is also shown and the remaining margin of gross-profit,

representing net profit, can be seen at a glance.

Most important of all is the record of "Purchase Possible," and "On Order." One of the most difficult problems of the retailer is to control his purchasing so as to keep it within proper relation to his sales. A large number of retailers fail because all their profits go "up on the shelf," so to speak, being required to pay for the constantly-growing purchases. The turnover is constantly slowing down and the business getting overloaded with stock. By the **Graficount method you can not overbuy as long as you keep your purchases or new orders within the amount of checks shown in the two boxes "Purchase Possible" and "On Order."**

#### General Accounts.

We have already described the boxes in the fifth row across the case. Post the last three of these, "Bills Payable," "Bills Receivable," and "Cash Capital," with white guide checks on which the outstanding total of each of these

**ANNUAL CONVENTION**

**A. A. G. O.**

The Dealer and Service Organization of the Automobile Trade

**AUDITORIUM HOTEL**

**Chicago, Illinois, Feb. 1 and 2**

**During the Chicago Automobile Show**

**Every Auto Dealer, Garageman, Repairman and**

**□ □ □ Serviceman should attend. □ □ □**

amounts, as of the first of the month, has been noted. From time to time each of these accounts can be added to or posted as follows:

**Bills Payable:** First add fresh money checks to the amount noted on the guide checks. Thereafter, each night, add checks for any new, unpaid bills which have been accepted during the day and checked up. For any bills previously posted in the box and which are paid during the day, remove that amount of checks from the box, restoring them to "check supply." In this way the total amount of outstanding bills-payable at any time during the month can be seen and, at the end of the month, the total can be posted in the monthly statement.

**Bills Receivable:** As you render bills to customers, keep a record of their amount each day and at the close of the day, add checks to that amount to the box so labeled. At the beginning, supply the box with checks to the amount noted on the white guide-check. As you receive payment for any bills or accounts, note their total for the day and remove this amount of checks from the box, restoring them to "Check Supply."

**Cash Capital:** At the beginning, add money checks to the amount noted on the white guide-check and post, each day, any bank deposits or cash collections by putting new checks into the box, taken from "Check Supply." As

amounts are checked out of the bank account, remove checks to that amount from the box, restoring them to "Check Supply." If the "Cash Capital" so used is for the purchase of equipment, move these checks to "Equipment Inventory" box in the lower right-hand corner of the cases.

**Equipment Inventory:** In the beginning make an appraisal of your total equipment at its present value and write this amount on a guide check. Place this check, together with money checks to the same amount, in the "Equipment Inventory" box. If any piece of equipment is disposed of, either through being "charged off," discarded or sold, remove checks to this amount from the box. If the equipment has been sold, place the checks in the "Cash Capital" box or the "Bills Receivable" as the case may be.

#### Retailing Department.

End of Month Statements—Year Commencing

Retail Dept.	Feb.	Mar.	Apr.	May	June	July
Expected Sales.						
Actual Sales.						
Balance						
Gross Profit.						
Expenses						
Net Profit—Loss						
On Order 1st.						
On Order Last.						
Bal. Purch. Poss.						
Mdse. Inv'y 1st						
Mdse. Inv'y Last						
<b>Service Dept.</b>						
Equip. Inv'y 1st						
Equip. Inv'y Last						
Jobs, 1st of Mo.						
Total Jobs.						
Jobs in hand, Last.						
Jobs Finished.						
Materials Cost.						
Direct Expense.						
Est. Profit—Loss						
Est. Cost Unfin.						
Appr. Profit, Loss						
<b>Total—</b>						
Bills Pay. 1st Mo.						
Bills Pay. L'st Mo.						
Bills Rec. 1st Mo.						
Bills Rec. L'st Mo.						
Capital 1st Mo.						
Capital Last Mo.						

**Monthly Statement:** At the close of the month, the statement on the form shown can be filled out as follows:

Expected Sales; meaning the amount of the white guide-check in that box. Actual Sales; shown by subtracting the amount of any checks left in the box from the amount of "Expected Sales," since these would show a sales-decrease, compared with last year or with the standard expected.

After posting such decrease in the monthly statement, move such remaining checks to the top box of the last month then being stocked by new purchases. These represent that much undischarged sales-burden, being "carried forward," so to speak. In case sales exceed the standard, the checks in the "Expected Sales" box will be exhausted

before the end of the month. In this case, post sales thereafter, until the end of the month, as follows:

Move checks from the next month's "Expected Sales" box to its gross-profit box as a temporary guide. Figure the amount of gross-profit box of the present month. Take fresh checks also to equal the merchandise cost of these new sales and place them in the "Purchase Possible" box or the "On Order" box, if outstanding orders require fresh sales to catch up with orders, so to speak. Then, at the end of the month, the actual sales will be shown by the checks temporarily moved in the next month's account, added to the amount of "Expected Sales" on the white guide-check of the present month. Note this total on the statement and return to the "Expected Sales" box of the next month the checks which were temporarily moved as a "marker," so to speak.

**Gross Profit:** The total gross-profit earned for the month will be shown by the checks in that box, added to those in the "Expense" box. Post this item in the statement.

**Expenses:** The total of these for the month will be shown by the checks in the box so marked and should be posted accordingly in the statement.

**Net profit:** The net profit for the month will be shown by the checks remaining in the "Gross Profit" box, since net profit is what remains of gross profit, after all expenses for the period have been defrayed.

**On Order:** Total of outstanding merchandise orders will be shown by the checks in the box so marked and should be posted accordingly in the statement.

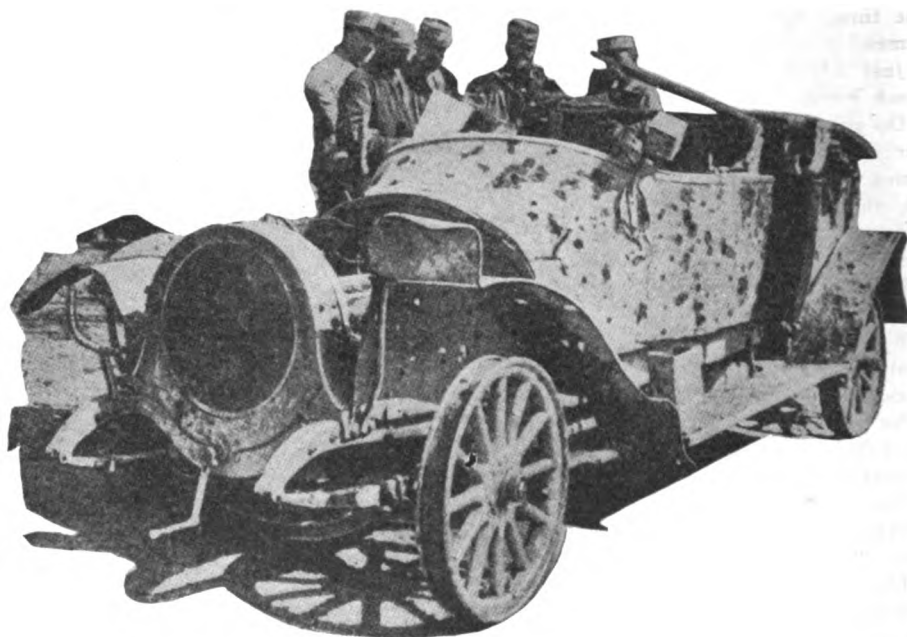
**Unused Purchase Possible:** This amount, showing the merchandise-cost proceeds of sales not yet absorbed by new purchases or orders, is shown by the checks remaining in that box and should be posted accordingly in the statement. After posting these current monthly facts of the business in the final monthly statement, the checks in "Gross Profit" box can be moved to the box marked "Retailing Profit-Loss," so that accumulated profits from month to month will be "carried forward," so to speak and, at any time, show profits for the year, to date. The checks remaining in the "Expense" box can be restored to "Check Supply."

During the month it is possible that the expenses may exceed the gross-profit. In such a case "borrow" checks from "Cash Capital" and note the amount on a white "Due" check, placing it with the "borrowed" checks in the "Expense" box. Then, at the end of the month, any excess of expenses over gross profits will be immediately shown.

If, to increase the stock for a rush season, it is desirable to make purchases

in excess of the "Purchase Possible" checks, borrow the checks from "Cash Capital" in the same way, if the goods are being paid for. If not, take fresh checks to that amount on a white "Due" check and place both in the "Purchase Possible" box with the white check back of all. After that, however, this amount of anticipated buying power should be repaid, so to speak. Do this by placing the merchandise-cost checks of subsequent sales back of the white "Due" check in "Purchase Possible" box, not to be used for fresh orders, until the checks so added equal the amount noted on that "Due" check. By this time the "borrowed" purchasing power will have been created by sales and the "Due" check can be removed and destroyed.

When the retail end of the business has sustained an operating loss by the end of the month, place that amount of "borrowed" checks (from "Check Supply") in the profit-loss box turned backwards, so that from time to time accumulated losses will be carried forward so to speak. As subsequent profits wipe out a previous loss, take that amount of checks out and restore to "Check Supply."



### An "Incident" on the Somme Front.

Here is an automobile that has received its baptism of fire. It would be difficult to put one's hand on it in a place unmarked by a bullet. It is a French machine and had two dispatch carriers besides the chauffeur when it suddenly became the center of a zone of German machine gun fire. One of the first bullets hit the chauffeur, seriously wounding him.

The spray of bullets then beat its devil's tattoo on, in and through the machine. The hood was torn loose and completely shot away. Within a few seconds, every tire

### America Is Panic Proof.

That America has attained sufficient commercial momentum to make her panic proof is the opinion of C. F. Jensen, Secretary of the Premier Motor Corporation of Indianapolis.

"If an individual," says Mr. Jensen, "is operating on a narrow margin, any little unexpected development will effect him vitally. On the other hand, if he has ample funds on deposit, a disappointment on collections or minor reverses do not appal him. The same is true, in an infinitely larger way, of nations. A nation's wealth is divided into two classes—the wealth that is in its soil, and its gold reserve. In both departments America is today by far the richest nation on the globe. So stupendous are her assets that conditions which formerly played smash with American business from now on can have little effect."

"America has developed such commercial momentum that she is now panic proof. There are just two things that could stagger her—a big war such as European nations are now struggling with, or a wholesale country wide labor disturbance involving every branch of her industry, but she would survive."

had been punctured and blown from the rims. Hundreds of bullets went completely through the body. The side of the engine was completely coated with lead from the bullets which had mushroomed against it.

But the wounded chauffeur brought the machine safely to headquarters and neither of his dispatch bearing passengers had a scratch. Not a bullet in any way harmed a vital part of the machine. Lacking only the tires and a hood, it was in perfect trim to return to service. The mechanism was absolutely intact. To the soldiers, it was simply an incident on the Somme front.

# Mechanical and Engineering Problems

*THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and now consulting engineer with the Western Electric Co. When shop information is desired, write Mr. Hinrichsen, care this office.*

## Fire Damages Result from Back-firing.

Firemen were driven back like soldiers from an artillery attack, and the garage was destroyed with a loss estimated at \$175,000. The entire bombardment took place in little less than an hour after the first motor tank exploded and sent a spray of gasoline over the other tanks, which exploded in rapid succession.

"The fire started," said William Long, a mechanic, "by the backfiring of a carbureter on a machine where I was working. The tank of the machine was being filled at the time, and the backfire set off the fumes."—*Chicago Tribune*, Dec. 21, 1916.

The above clipping should give the average garage owner food for thought. How careful are you? How careful are your men?

"The fire started by the back-firing of a carbureter on a machine where I was working. The tank was being filled at the time, and the back-fire set off the fumes."

Just a little carelessness—a little too much hurry—cost \$175,000.

Do you ever do this or something similar? You may get away with it several times, but sooner or later, if you keep it up, there will be a little item in the paper about how John Doe's garage was destroyed by fire, and perhaps will be followed by John Doe's life history, good characteristics and what a loss he will be to the community, for fifty per cent of such accidents are fatal to the ones who cause them.

An experience of my own has made me extremely careful to avoid accidents of this kind.

Just after dark one evening a car drove up to the garage for gasoline. This car was equipped with gas headlights and oil side and tail lights. The "oil and gas" man at once began filling the tank. It was a hot summer night and the gasoline evidently fumed freely, for just as the tank was full, there was a flash and instantly the car was in flames. The man who was filling jumped out and jerked the gasoline hose from the filling tank with him. The gasoline left in the hose was, of course, scattered over the seats to give the fire fresh fuel.

In twenty minutes the car was a wreck, and all because no one thought to extinguish the lights before filling.

We all of us do fool things like this, at least once in a while, and it is nearly always just thoughtlessness.

Make it a rule to never bring gasoline near an open flame, not forgetting that a running engine often produces an open flame, and you will have reduced your fire hazard at least one-half.

\* \* \*

## Short Method of Cutting Down Brake Drums.

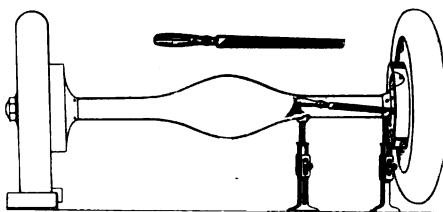
I would like to know of some short method to cut down the width of brake drums. Every once in a while we have a car come to us which has a brake drum which extends so far to the inside it rubs on the brackets which hold the external brake in place. This not only makes a disagreeable squeaking but in some cases has made it necessary to replace these bracket supports.

The only method we know of is to take off brake drum and put it in a lathe and dress off the edge of drum until this condition is relieved. This operation takes three or four hours' time, as we don't have a lathe that will swing an automobile wheel over the ways, making it necessary to remove drum from wheel.

*Question.*—What method do you recommend?

C. W. E.

*Answer.*—This job can be done in less than thirty minutes as well as can be done on the lathe. The mode of procedure is as follows: Assuming that it is the right



hand drum that is at fault (this I have found to be the rule), securely block the left hand rear wheel, then jack up right side till right wheel clears floor; then set another jack within one-half inch and on the inside edge of brake drum, raising jack till head is equal distance from floor as lower side of axle housing.

Then get an old file, grind off end, giving some clearance like a lathe tool. Everything ready, start motor, set gear lever in reverse, let clutch in, which will revolve right wheel in reverse direction, taking firm hold on file; rest on head of jack, force against edge of drum. A sixteenth of an inch of metal can be shaved off edge of drum in fifteen minutes by this method. The accompanying sketch will make this explanation more clear.

\* \* \*

## Accelerating on Battery and Magneto.

*Question.*—I have a dual system of ignition on a car in my shop. I start on bat-

tery and switch on magneto as soon as possible, and want to know why it is that the engine will not accelerate on battery as easily as it does on magneto. I. M. L.

*Answer.*—When starting the car battery is used because the engine needs to be cranked only once or twice and it will start, whereas if it were started on magneto the engine would have to be cranked considerably in order to bring up the voltage of the magneto high enough so that a spark would be produced at the plugs, whereas, when starting on battery it is only necessary to crank the engine past the sparking point so that the battery current is interrupted. The moment the current is interrupted the spark is produced. The reason that the engine runs slower on battery than on magneto is that on magneto the spark is produced instantly, whereas on battery the spark lags considerably, because it requires some time before the spark builds up after the contact on the interrupter is made.

\* \* \*

## Setting in Car Wheels.

*Question.*—How much do ordinary cars "toe in" on the front wheels? Are the wheels set so that they run straight forward, or are they set in a little? What is the reason of setting in the wheels?

S. L. H.

*Answer.*—In ordinary practice front wheels "toe in" one inch. That is, the distance between the wheels is one inch smaller on bottom than on the top so that the spoke that is pointing downward is perfectly vertical, as the spokes are dished; that is, they are slightly inclined from the outside rim inwardly toward the hub, which makes the wheel resemble a flattened cone. This is done because it gives the front wheels unlimited elastic properties when turning corners. Setting in of a front wheel is accomplished by drawing up on the connecting link which connects both the front wheels to the steering gear. Wheels in ordinary practice are set in one-quarter inch; that is, the wheels are one-quarter of an inch nearer together in front than in the rear of the front wheels. This is done so that when in a sandy road the wheels will not be torn apart by the action or pressure of the sand upon the sides of the wheel.

\* \* \*

## Why Open the Cut-Out?

*Question.*—What is the idea of opening the cut-out when ascending a hill?

C. H. A.

*Answer.*—Back pressure is produced by the resistance formed in the exhaust-line and muffler to the free passage of the exhaust gases, which cuts down the power

Insurance made reasonable by the A. A. G. O., see pages 25 and 26



### Building a Garage Right.

**Question.**—I am contemplating on having a party put me up a new building this spring, and would like an idea as to the way to build same to be the most convenient.

Building, 55x127 feet, to be either concrete blocks or brick, one story, concrete floor and posts in center or trussed roof.

There is a one and one-half story brick building on the west side and a frame hotel on the east side only covering part of the lot.

Will want office, stock room, women's and men's toilet, shop in rear and welding room, steam heated and rear door in northeast corner.

Is it advisable to make a pit full length of shop and cover flush with floor with 2x12-inch planks?

Hope that you can give me some valuable information. R. W. L.

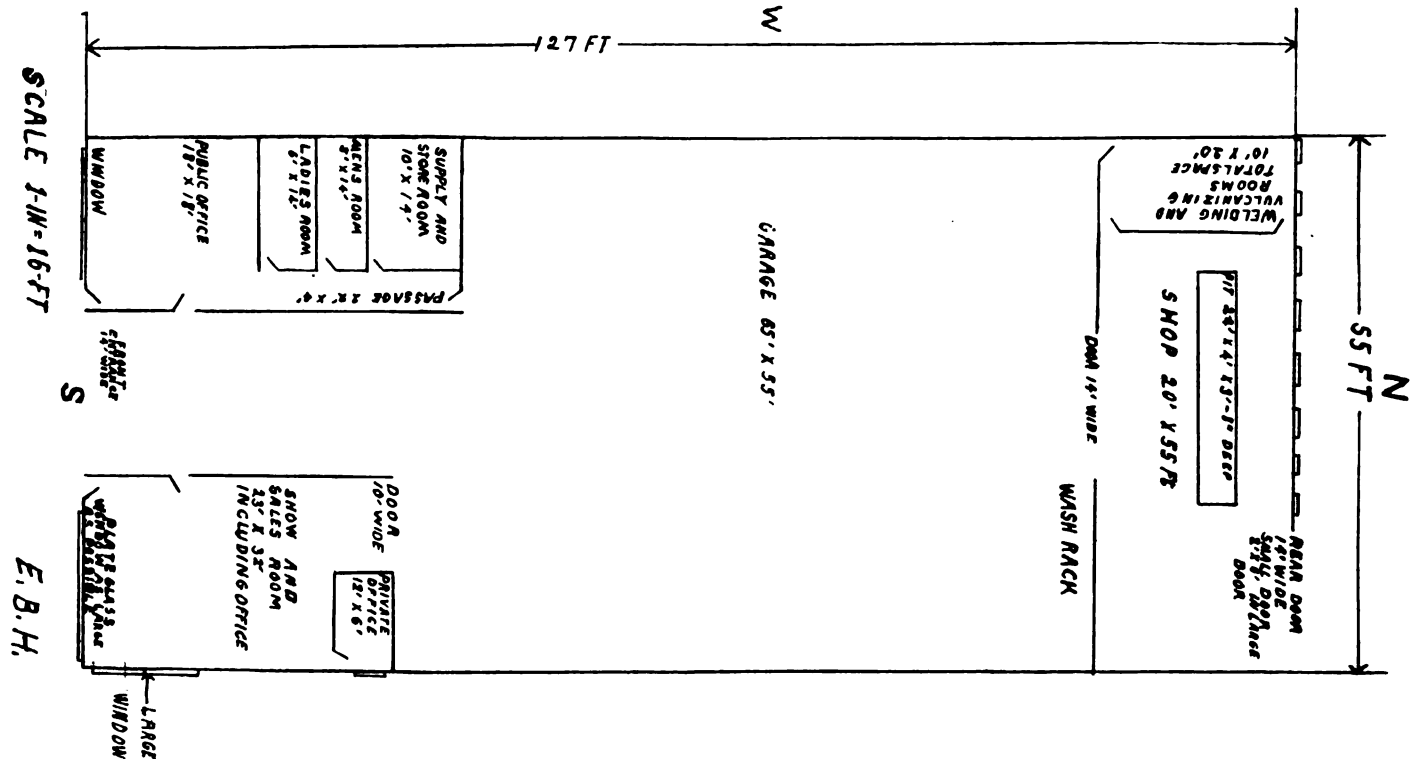
**Answer.**—The floor plan sketch shown is a very desirable arrangement. The dimensions given are only approximate and can be varied to suit conditions. I rather think the office room shown is

larger than you require, but would advise that you do not skimp at this point. Make your sales room large enough, and by all means make it light, clean and attractive.

The roof should be trussed. Posts in a garage are an abomination. Skylights will give you the best light, but put in windows wherever they will do good.

In regard to the pit, I see no objection to it as you plan it, but be sure and support your covering with joists as a floor is supported.

Should anything not be clear on the sketch, please write again.



of an engine. When the cut-out is opened, the exhaust gases have a free passage to the open air and full power of the engine is developed. Some people open the cut-out to hear how the engine is hitting when going up a hill or making a hard pull.

### Full Floating Axles.

**Question.**—What is the meaning of a full floating axle? S. C. D.

**Answer.**—On a car equipped with full floating axles the weight is supported entirely upon the differential housing. The driving axle being inside the housing only transmits the power to the wheels.

### A Case of Gear Trouble.

**Question.**—Why is it that when I start up a car the gears growl when I shift from first to second speed? When I shift from second to third speed the gears mesh without a sound. Furthermore, it is almost impossible to shift from third speed to second speed without almost stopping the car. Is there any manner which I can overcome this trouble without going to a great expense? J. H. R.

**Answer.**—Your trouble can be overcome easily at hardly any expense. Grease the transmission thoroughly, then just follow these directions: When starting shift into first speed, accelerate moderately, depress clutch pedal and at the same instant release accelerator pedal and shift into neutral; wait about one second, then grasp the shifting lever lightly but firmly and pull into second speed easily. By starting the car several times this way the exact time to wait before shifting can be found easily. When shifting from third speed to second speed depress the clutch, slip shift lever to neutral, let in clutch momentarily and accelerate, then release clutch, slip into second speed, letting in clutch again.

Of course, all this is done in a second's time and the correct time to wait before shifting into second speed is only found by experimenting a few times. The engine should be accelerated when the lever is in neutral and the clutch in in order to have the gears revolving at the same speed. If the lever is shifted from third

to second speed without waiting and accelerating, the second speed gear on the main shaft will be going a good deal faster than the second speed gear on the countershaft, and if shifted at that time the gears will growl until they both revolve at the same speed, then they will mesh easily. Furthermore, I think that the throwout collar on this car if not lubricated properly also has something to do with the growling.

### Curing a Motor Knock.

**Question.**—I am a reader of the AMERICAN GARAGE and AUTO DEALER and also own and drive a 1914 Model T Ford car which recently developed a knock. I had it looked over by a good mechanic but we cannot locate the trouble. Put in new crank shaft, new pistons (connecting rods O. K.), new push rods and valves. The cylinders seem O. K. and ignition system in good order, but still the knock.

Motor knocks worst when running idle, also when running down grade (Continued on page 44.)

# Gives You a Greater Pull With Purchasers

Increases Profits

## "Little Giant" Gear and Wheel Puller

Reduce "repair" time in the garage—turn "waste" minutes into **actual** money and promote customer-satisfaction. The "Little Giant" Gear and Wheel Puller does it.

It is a wonder of simplicity and strength—**DROP FORGE AND TOOL STEEL THROUGHOUT**. Nothing complicated about it.

**One** adjustment attachment makes it an all 'round Gear and Wheel Puller. **Consider** that—a simple, strong, practically no-wear-out device that pulls **gears—bearings—and pulleys** from 1 to 13 inches in diameter with a powerful, straight pull—**without** slightest tendency of twisting off. Turned "inside out," it forms the handiest calipers you ever laid hands on. **Your** idea of an ideal Gear and Wheel Puller. **One tool—one investment. Makes** you money by saving time and trouble. Strengthens your "stand in" with customers by getting the job out when promised. **Try it. Keep "tally" on results.** If you are not pleased, ship it back and purchase price will be refunded immediately. **Retail price, \$10.00.**

## A Light That Will Make Profits Loom Up To Your Liking

The Premier Magnetic "Stickalite" sells on sight. Sticks tight at any angle on iron or steel. Connects with any lamp socket on car. Brilliant white light where you want it and as long as you want it. Compact—convenient. Weighs

only 3 oz. Complete with 6 C. P. lamp, 10 ft. flexible cord and plug to fit any socket. Specify style plug wanted—single or double contact—"push and turn" or screw thread.

**Retail Price, \$1.00.**

## Premier Automatic Electric Portable Vulcanizer

The most mechanically perfect device of the kind ever invented. Modern motorists **demand** it. Thousands in use. An extensive advertising campaign is introducing it to thousands of **prospective** users. And this introduction means **instant, insistent and ever-increasing** demand.

It has revolutionized vulcanizing methods. Recognized the safest, surest,

quickest, cleanest of all. Just prepare cut, connect Premier with battery or home lighting system. "**Press Little Red Button and Forget It.**" When repair is completed, the Premier automatically shuts off electric current, eliminating all risk of "under" or "over" curing. Economical—safe—quick—no gasoline—no matches—no danger—nothing "doubtful" or "disagreeable" about it.

Guaranteed to give satisfaction. Complete outfit for repairing tubes or casings. Liberal discount to dealers.

**Retail price, \$3.50.**

**DEALERS: USE  
THIS COUPON**

and "corner" desirable trade.

**PREMIER ELECTRIC CO., 4039 Ravenswood Ave., Chicago, Ill.:**  
Gentlemen:—Send complete descriptive matter on Premier

Products with prices and Dealer's Discounts.

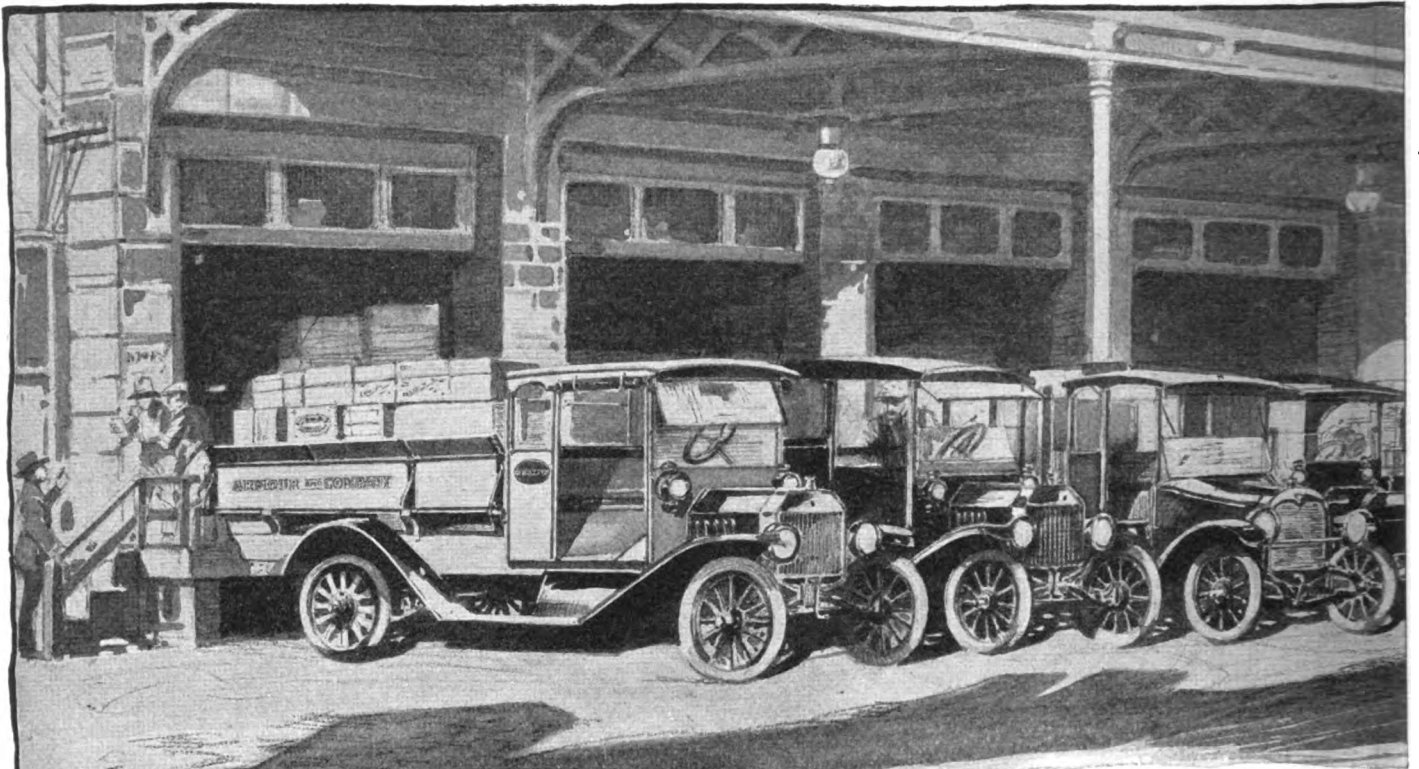
Name .....

St. Add. ....

City ..... State.....

Jobber .....

BRANCHES: Northern Electric Co., Ltd., Montreal, Can. Asch & Co., Inc., 1779 Broadway, N.Y. Hughson & Merton, Inc., San Francisco.



# Smith Form-a-Truck

# \$350

f. o. b. Chicago

## Many Progressive Dealers

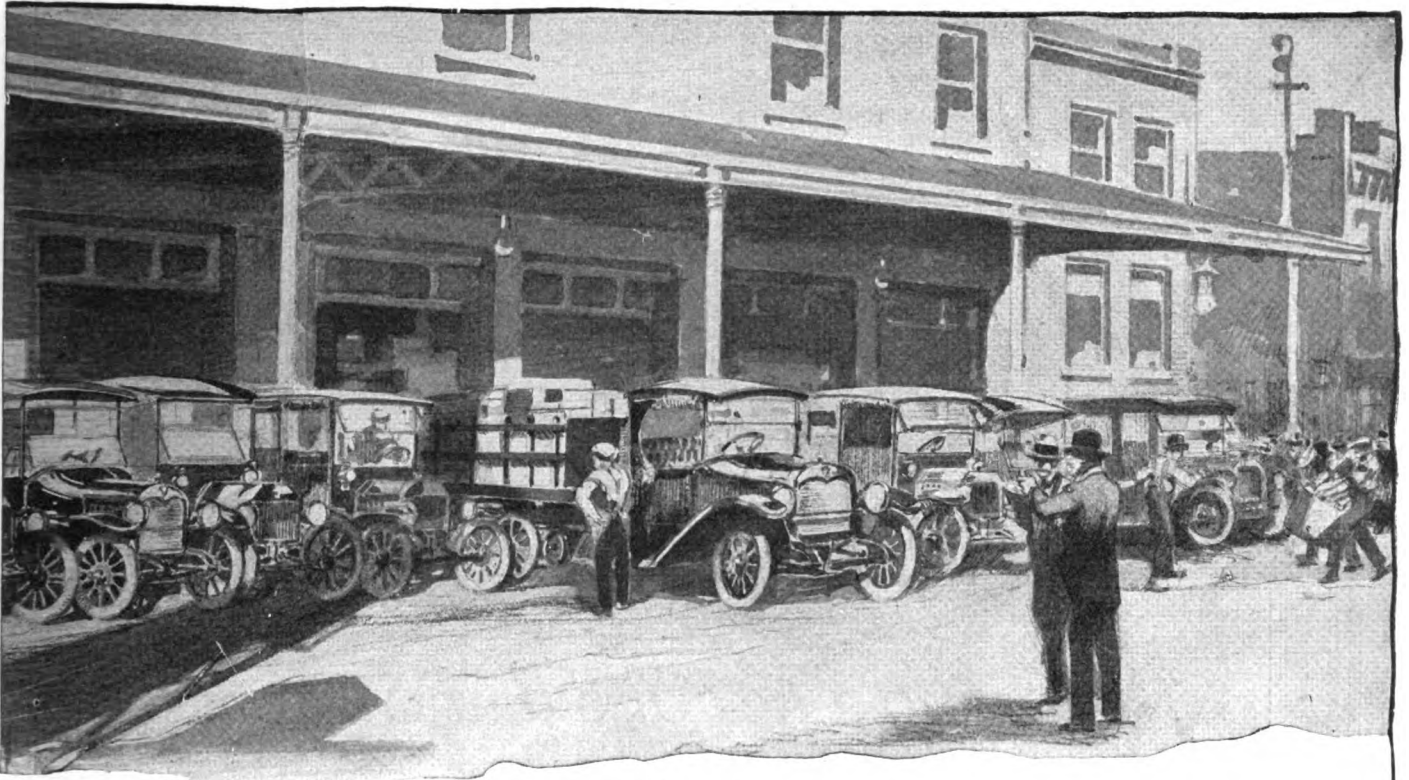
**T**HE Smith Form-a-Truck dealership has meant a small fortune during the past year to each of a large number of aggressive automobile men in all parts of the country.

Smith Form-a-Trucks have sold in larger quantities than any other motor truck, or all other motor truck attachments. Over 9,000 are now in use and thousands more are on order for immediate delivery.

The support rendered to every Smith Form-a-Truck dealer in the way of advertising — direct sales helps—real merchandising effort—has been greater than ever before rendered by either motor truck, motor truck attachment or pleasure car manufacturer.

Even greater co-operation will be extended during the coming year. Tremendous developments in construction have now resulted in Smith Form-a-Truck attachments for Dodge, Chevrolet, Buick, Overland and Maxwell cars at the same price as the original attachment for the Ford.

There are still a limited number of Smith Form-a-Truck sales territories open. These are rapidly being closed. Only dealers qualified by real sales achievements are being considered.



## Have Made Small Fortunes

The Smith Form-a-Truck dealership is your opportunity—if your territory is still open—and you are qualified.

Make your application now—by wire—it is the only way to get in touch with the biggest chance to make real money that has probably ever come your way.

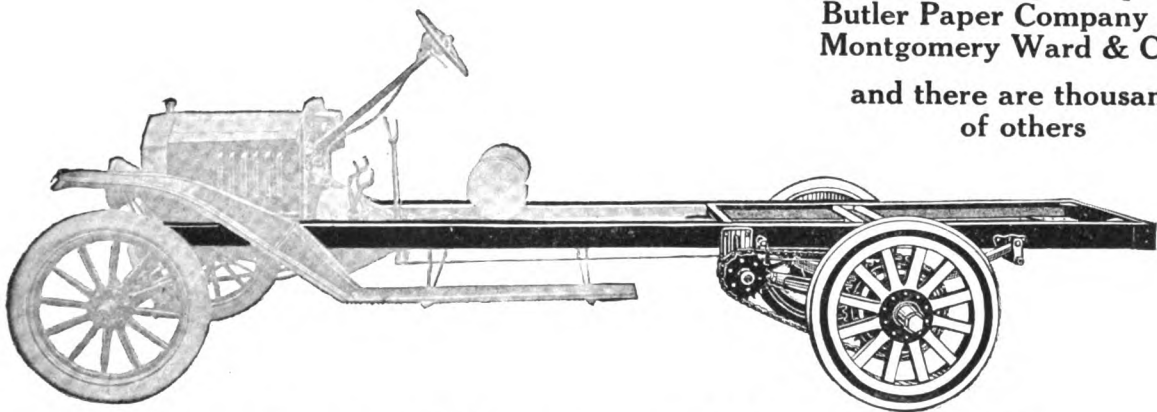
Tie up with a real campaign of dealer helps—with the biggest, strongest attachment manufacturer in the country—with the most successful motor transportation sales sensation of the industry.

See it at the Show. Smith Form-a-Truck will be on exhibit at the big Automobile Shows. See it—make arrangements for territory.

## These big concerns operate Smith Form-a-Trucks

Standard Oil Company  
Armour & Company  
Morris & Company  
Indian Refining Company  
Fleishmann Yeast Company  
Cudahy Packing Company  
U. S. Mail Contractors  
Schlitz Brewing Company  
Butler Paper Company  
Montgomery Ward & Co.

and there are thousands  
of others

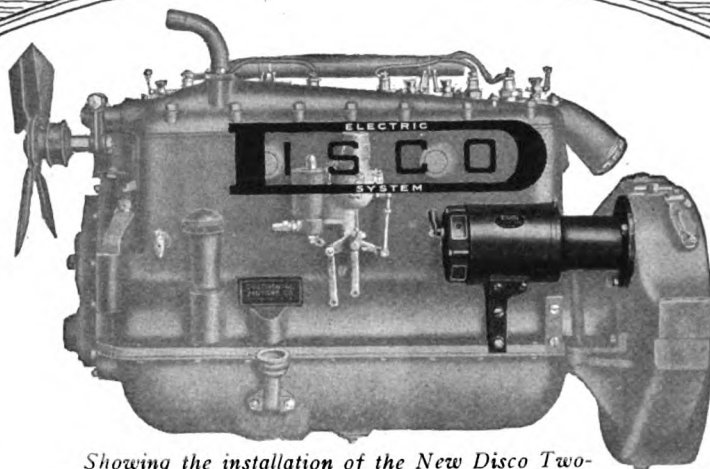


# Smith Form-a-Truck Co.

1470 Michigan Boulevard, Chicago

Suite 984





*Showing the installation of the New Disco Two-Unit System on the Continental Motor*

## *Presenting a New Two Unit System*

**C**OMPARATIVE tests made in our own laboratories and by car manufacturers have proven this new two unit system to have many marked advantages over even the finest and highest priced systems made today.

It is fitting that this latest, improved system should have been produced by the Disco Co., the proven makers of starting and lighting systems in this country.

Over a decade of experience, of experimenting, testing and proving, have gone into it. It draws less current, thus being easier on the batteries.

Its compact, well thought out design cuts installation time nearly in half. This is of particular advantage on the type for Fords, as it requires only a little over four hours installation time, against about eight hours for the average make. It is the most accessible design yet produced. Loosening four bolts permits complete inspection and adjustments.

It is machined and constructed with a degree of accuracy never before used in starter construction, and equalled only in the finest, highest priced motor car work. This accuracy is made possible by the new, specially built machines and equipment installed in our fine new plant in Detroit.

In short, the New Disco is a system you can install in a motor car and forget. It will do its work silently and efficiently as long as the car lasts *and without expensive repair shop assistance.*

**THE TYPE FOR FORDS**—The New Disco Two Unit System is made in a type for Fords that combines all the advantages mentioned, and sells for \$70.00. We will also continue to make our single unit system for Fords selling for \$65.00.

Deliveries on the New Two Unit System will start Feb. 1st. Immediate deliveries can be made on the single unit system.

**DEALERS** will find the Disco line an extremely profitable one this coming year. Write or investigate it at the Shows.

**DISCO ELECTRIC STARTER CORPORATION**  
**DETROIT**



*All cars would be better cars  
if Disco Equipped*



# Our Thanksgiving for the New Year

¶ We are indeed, at this Yuletide Season, deeply thankful for the prosperity the year just closing has brought to the motor truck industry.

¶ We also give thanks that we are on the threshold of a new year of prosperity.

¶ In 1917 we will continue to demonstrate that no principle of mechanical design in the motor truck industry has popularized itself more rapidly and permanently than has the Internal Gear Drive Axle.

¶ Up to 1914 there had been sold in the United States, by two axle manufacturers, 586 Internal Gear Drive Axles.

¶ In 1915 another company commenced the manufacture of Internal Gear Drive Axles, and in that year the combined output of this type of final drive was 3235.

¶ In 1916, the three Internal Gear Axle manufacturers built and sold 19,461 Internal Gear Axles.

(OVER)

(Continued from preceding page)

¶ RUSSEL Internal Gear Axle production in 1916 increased seven hundred per cent over that of 1915.

¶ From figures obtained from the other two Internal Gear Axle manufacturers, in 1917, the combined production of three companies will be approximately 40,000 Internal Gear Drive Axles.

¶ We have made new additions to our plant and have been able to secure the necessary machinery to double our production during the coming year in order to fulfil our contract specifications for axles.

¶ The Internal Gear Axle has arrived. Actual heavy duty service for three years has demonstrated it to be the most serviceable, economical and durable final drive for motor trucks.

¶ It is with increased enthusiasm that we enter upon a new year of business with unbounded confidence that we are making the best type of rear axle for motor trucks.

¶ To all those connected with the motor car industry, we extend our heartiest wishes that the New Year brings them even more prosperity than they have enjoyed in the year just closing.

# Russel

MOTOR AXLE COMPANY, NORTH DETROIT



# Hello Dealers! I'm Mr. No-Worry Springs

*I have a money making tip for you!*

**No center bolt—no center nib  
—no center breakage**

In other words, springs of **no trouble, no worry**. That's why more Tuthill Titanics are used for replacements than **all others put together**, and why dealers make a **steady, dependable, profit** on

## TUTHILL LUBRICATED TITANIC SPRINGS

Tuthill Titanics are strong at the point where all other springs are weak, and the point where seventy-five per cent of all breakage occurs—at the center hole. The picture tells the story. See that arch, and see the two plates top and bottom that fasten to the arch and hold the leaves of the springs in a vice-like grip. THERE'S NO SUCH THING AS A TUTHILL TITANIC SPRING breaking at the center.

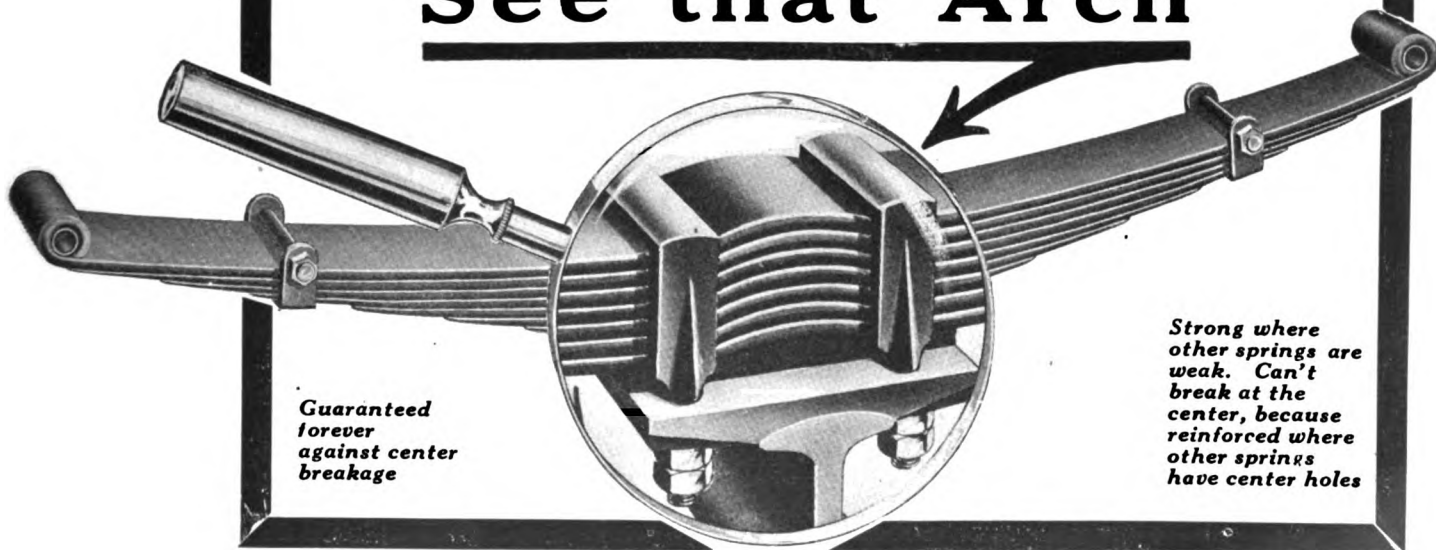
Tuthill Titanics are also made with a special lubricating, rust-preventing compound made from graphite, inserted between the leaves of the springs. IT STOPS ALL SQUEAKS.

### WE NOT ONLY GIVE YOU A BETTER SPRING BUT BETTER DELIVERY SERVICE

All orders are shipped the same day as received. All special orders are shipped from factory within two or three days. You can't beat this service. No springs equal Tuthill Titanics. If you aren't handling them you aren't getting your share of the big replacement business. WRITE TODAY FOR BOOKLET, PRICE LIST, FULL INFORMATION OF OUR PROPOSITION TO YOU, and name of nearest distributor of Tuthill Springs.

**TUTHILL SPRING CO., 760 Polk St., Chicago, Ill.**

## See that Arch



(Continued from page 36.)

with just a little gas on and if we short No. 1 cylinder it knocks very hard but not so in shorting other cylinders.

I run this car the year round and it works fine with this one exception. Give the car the best of care at all times and am very anxious to have the knock taken out. Would be very glad if you can give me any help on the subject.

J. N. W.

**Note.**—The above letter is from a car owner, presumably a former garageman or dealer, and not now in the trade, so we wrote him it was contrary to our policy to give advice to any but regular garage owners or repairmen; but as he had evidently done his best to get the trouble removed at a repair shop, we would give the advice asked for with the understanding that he have the work done by a regular repairman, preferably a member of the A. A. G. O.

**Answer.**—There are about four places the trouble you describe could be located and if your work has been properly done three of them have been eliminated, viz., the front main bearing, the connecting rod bearing at the crank shaft end and the wrist pin. The fourth is the front cam shaft bearing, and unless I am very much mistaken, your knock is there. It may be worn in the bearing itself or may have become loose in its socket in the crank case.

It would be well to have the other places mentioned looked at at the same time, for if it is a true knock and acts as you describe it, it must be at one of these points.

\* \* \*

### A Steel Softening Compound.

**Question.**—Please give me the name of some compound that will soften steel in welding with oxygen. I am having some trouble of this kind and would be glad of some remedy that will prevent it from hardening.

Thanking you in advance for this information. — AUTO CO.

**Answer.**—If I understand your inquiry, the trouble you have is that the steel apparently becomes hardened during the welding process.

If this is the case, I am of the opinion that the steel becomes hard through too rapid cooling. We have made a number of experiments along this line and find that steel after welding often becomes hard and brittle if allowed to cool gradually in the open air and always hardens if the cooling is hurried.

We also found that the best results were obtained by covering the metal with powdered lime and allowing it to cool in this. Try this and see if you do not get better results.

\* \* \*

### Assembling a Speedster.

**Question.**—We want to assemble a speedster during our spare time between now and spring.

We figure on a car about 1,800 to 2,100 pounds, 108-inch wheel base, 33x4-inch wheels, 9-inch clearance and 22 to 25 H. P. motor. In short, a sturdy, well balanced economical two-passenger bus that will turn seventy miles per hour without leaving parts all over the road.

What make and power motor, carburetor, makes and capacity radiator, make and kind of clutch and transmission, number and make of universal joints, make and kind of axles, gear ratio, tubular or open drive shaft, kind, length and make of springs, speedometer and steering gear would you suggest?

A. W.

**Answer.**—We will be glad to furnish all the information we can in a general way, but cannot very well recommend any makes of parts in these columns.

The writer will be glad to furnish you with his recommendations by letter, however, and give you any advice in his power.

I think you will require a larger engine than you mention if you expect to get very high speeds. I rather think you would get the best results from a small bore, long stroke, fairly high speed motor. With the size wheels you specify, you should get approximately seventy miles per hour with the engine turning 3,000 r. p. m. with a gear ratio of 4 to 1. I believe you could get about this speed with a 35 to 40 h. p. high speed motor.

As to clutch and transmission, this would depend to a large extent on the type of engine. If you used a unit type power plant, the clutch, transmission and front universal joint would be included in the unit. In this case I would advise an open drive shaft, annular ball bearings for front and rear wheels and differential would be desirable in a car of this weight with a full floating rear axle.

The springs should be semi-elliptic in front and three-quarter elliptic rear, with snubbing devices all around.

The steering device should be worm and gear.

The radiator will depend largely on the engine, but should be of the honeycomb type and, together with the engine water jackets, should hold at least four gallons.

The carburetor and magneto will also depend on the engine used and, until this is decided, they would be more or less guess work.

If the above does not discourage you with the undertaking, will be glad to go into the matter further with you.

\* \* \*

### How to Overcome Battery Sulphation.

**Question.**—In your next issue, will you kindly name some of the most simple as well as the most reliable methods to overcome sulphation of a storage battery?

During my experience, it is quite common to find storage batteries more or less sulphated and, as usual, the old method to remedy this is a rather long and delicate job. Your answer to this problem would be greatly appreciated.

R. W. H.

**Answer.**—Sulphating is a very common and annoying trouble, and is encountered to a great extent in storage batteries used for lighting and starting systems. It is usually caused by the electrolyte being too low and exposing a part of the plates, by the battery being allowed to stand in a discharged condition or by being continually charged by too low a current or by a combination of these. I do not know of any better way to remedy it than the usual methods of charging, discharging and cleaning and, as you say, these are rather long and tedious jobs.

It seems to me that the best remedy is to prevent it rather than cure it, and this comes in line with the policy of persuading the car owner to have regular inspections at the garage. Regular weekly hydrometer and voltmeter tests, of which a careful record should be kept, will soon show whether the battery is being charged at too low a current, and a monthly extra charge will greatly help in keeping it in good condition.

We expect to take up the maintenance of starting and lighting systems in a series of articles in the near future.

\* \* \*

### Another Battery Problem.

**Question.**—I have a storage battery that will take the charge and hold it for several days, but as soon as any lights are attached, no matter how small, the battery will be exhausted in about one and one-half hours. The only thing that I know of that could be the matter is that the plates are about all crumbled up and in the bottom of the battery. Will you kindly answer in the next issue of the A. A. G. O.?

H. B. F.

P. S.—When I spoke of the battery taking the charge, I should have said a full charge.

**Answer.**—Your battery has evidently been allowed to get in very bad condition. The probable reason or reasons will be found in the answer to R. W. H.'s letter in this issue. If you think the battery is worth repairing, the following instructions should enable you to get it back in good shape again, although if you are not equipped to do the work properly, I would advise sending it to a concern that makes a specialty of this kind of repairs.

First, remove the semi-hard black filling from the top. This in itself is somewhat of a job. Then lift the plates out of the cells, taking particular care not to break the connection between the different sets of plates. Wash the plates



# Vulcanize Your Tubes

## Anywhere On the Road in 5 Minutes

### The New Shaler 5-Minute Vulcanizer

*Manufactured Under Low and Miles Patents*

#### A Chemicalized Disc Furnishes the Heat

#### A Match Is All That's Needed!

New principle in heating for vulcanizing tubes. A wonderful idea. The Shaler 5-Minute Vulcanizer operates without gasoline, electricity, steam.

You can seal the cut in the tube **yourself** in five minutes. Seal it with new rubber—make a perfect and permanent repair in **five minutes!** You can do it any time, anywhere. You carry the vulcanizer with you everywhere, right in your tool box!

#### Can't Burn the Tube

A Chemically Treated Disc about the size of a dollar furnishes the heat. (See illustration.) The Chemicalized Disc contained in the metal holder is simply placed over the rubber patch which is clamped over the cut in the tube. Touch a match to the Disc and it creates just the right degree of heat to seal the puncture permanently.

Positively **no danger** of ever burning the tube! No heat—absolutely none—reaches the tube surrounding the patch. There is no flame, no blaze.

## SHALER

### VULCANIZERS

**NOTE!** The Shaler 5-Minute Vulcanizer is manufactured by **C. A. Shaler Co.**, the oldest and largest makers of vulcanizers in the world. Basic patents covering this vulcanizer are owned by C. A. Shaler Co. All genuine Shaler Vulcanizers bear this well-known trademark.

Besides the Shaler 5-Minute Tube Vulcanizer at \$1.50 there are other Shaler models for Motorists and Garages from \$1.75 up, as well as complete plants for public repair shops.

#### Your Money Back

Order a Shaler 5-Minute Vulcanizer today. Vulcanizer and twelve patent heat units and twelve Rubber Patches sent for \$1.50 if dealer's name is given. Test the vulcanizer on repairing old tubes. Use it 10 days at our risk. Your money back if you are not delighted.



Complete With  
Twelve Discs  
and Patches

**\$ 1 50**

#### The Patent Heat Unit

Actual size. Simply touch a light to this Disc and it produces the necessary degree of heat to seal the rubber Patch over the cut in the tube.

The Disc is chemically treated to produce the right amount of heat without flame or blaze.

Each Disc contained in metal holder which is placed over the Rubber Patch and clamped onto the tube.

#### The Rubber Patch

Actual size. Pure Para Rubber, fabric-backed.

The heat of the Chemicalized Disc, when latter is lighted, seals the cut with this new rubber, making the damaged part like new.

Each Shaler 5-Minute Vulcanizer Outfit includes 12 each of the Patent Heat Units and Rubber Patches.

Order yours today. Your money back if you are not more than satisfied.

#### Dealers!

Over 100,000 of these wonderful vulcanizers sold last year with scarcely any advertising. The demand is tremendous! Every motorist wants the 5-Minute Vulcanizer. Our advertising will send you the buyers. Write for our proposition.

#### Send Today

Use the coupon attached for your convenience or write your order in a letter, enclosing \$1.50 (check or money order). Better order quick as the demand for this wonderful little time, work, money and worry saver will exceed the supply. Orders received within the next 10 days will be promptly filled. Order NOW!

**C. A. SHALER CO.**

**351 Fourth St., Waupun, Wis.**

#### MONEY BACK COUPON

**C. A. Shaler Co., 351 Fourth St., Waupun, Wis.**

Gentlemen: Enclosed find \$1.50 for which you will send me postpaid your Shaler 5-Minute Vulcanizer with 12 heat units and 12 Rubber Patches. I am to have the privilege of returning the Vulcanizer within 10 days and getting my money back if I am not satisfied.

Name .....

Street and No. ....

City ..... State .....

My Dealer's Name or Garage .....



with pure water and examine the separators between them. If you find any of these cracked or showing signs of going to pieces, they should be replaced. If any plates are badly warped or broken, they must be replaced. This is the big job and if you have any old sets of plates it would be well to practice a bit before trying on a good battery.

The connectors or lugs are really low heat welded to the plates and an amateur usually makes a sorry failure of connecting or "burning," as it is called, at his first few attempts. It is something worth knowing, however, and practice will soon enable you to do what will seem impossible at the first attempt. Use an alcohol flame, a small blow pipe and no flux of any kind. Get your surfaces and the metal around them perfectly clean, but do not use emery or sand paper. Careful cleaning with a cloth is best.

After you have put your plates in good condition, take the rubber cells out of the case and pour the electrolyte into a glass container. Examine the cells carefully for leakage and if none is found, wash them thoroughly and put back the electrolyte, first straining it through a cloth to remove any foreign substance. Now replace cells and plates in the case and fill in with the black compound before removed. You should melt this and pour it in, taking care that none enters the cells themselves.

Now fill the cells, if they need it, with distilled water until the plates are covered and immediately start charging the battery. Charge continually until the hydrometer tests show that the battery will take no more, then discharge slowly through lamps or some other proper resistance until the battery is about one-half discharged. Don't let the voltage fall below 1.9 volts per cell.

Then recharge again until each cell shows well above 2 volts. After this the battery should be in fair condition and may be put in service and if properly cared for will, in a short time, be as good as ever.

#### Sale Policy of Star Rubber Co.

The Star Rubber Co., Akron, Ohio, is marketing its high grade tire through one representative or distributor in a vicinity. The agency will be on an established resale policy which will allow a good profit to the dealer.

The company feels that if the dealer controls the selling price of the article he is left only to talk about quality and service, which argument leaves the customer on the defensive entirely. If another dealer sells the tire, the customer always has a chance for a price argument and is on the offensive.

# Does It Pay to Read This Magazine and Belong to the A. A. G. O.?

**D**OES it pay? An auto dealer and garageman in a city of 18,000 with one of the most modern buildings and cleanest of stocks, read the AMERICAN GARAGE AND AUTO DEALER and learned that the A. A. G. O. had an Insurance Department. He then became a member, making himself eligible to the association's insurance benefits. He took out two policies through this department and saved \$425.00—he figures it at \$440.00—on one year's insurance. This is the answer. And now, here is a question for you to answer: If the A. A. G. O. can save this member \$425 on his fire insurance for one year, how much can it save you? Better find out, hadn't you?

The new Star tire will be on exhibition at the Auditorium Hotel, where the convention of the A. A. G. O. will be held during the Chicago show.

#### Michigan May License Garage Mechanics.

Representative Charles W. Clark thinks that garage men should pass a state examination before a board of motor car engineers, and he is planning to introduce a bill into the state legislature to provide for licensing of those employed in motor car repair work.

"Some of the garages employ men who do not know whether the tail light should be placed on the radiator or the windshield; yet they are permitted to work on cars costing thousands of dollars," says Mr. Clark, "and I believe the license fee would pay the cost of the examination and such a board would be self-sustaining. In any event it would be a boon to the motorists and the motor industry of Michigan."

Mr. Clark's statement is inaccurate and extreme, but we all know what he means. The same idea has taken root in Wisconsin and Iowa, and in addition to protecting motorists the competent garage trade would be protected against the competition of irresponsible satchel mechanics by such a law.

Inasmuch as nearly every member of

the legislature is a car owner, it is believed that such a law, with the backing of the organized garagemen, has an excellent chance of getting on the statute books next session.

The Milwaukee Auto Show, January 5-11, was a big success, the attendance breaking all previous records. There were 301 pleasure cars and seventy-six commercial cars exhibited, besides 'oceans' of accessories. Bart J. Ruddle managed the proposition this year.

The Asheville, N. C., Auto Trade Association will hold its annual auto show January 25 to 27. E. C. Sawyer is president of the committee and J. P. Hill secretary-treasurer.

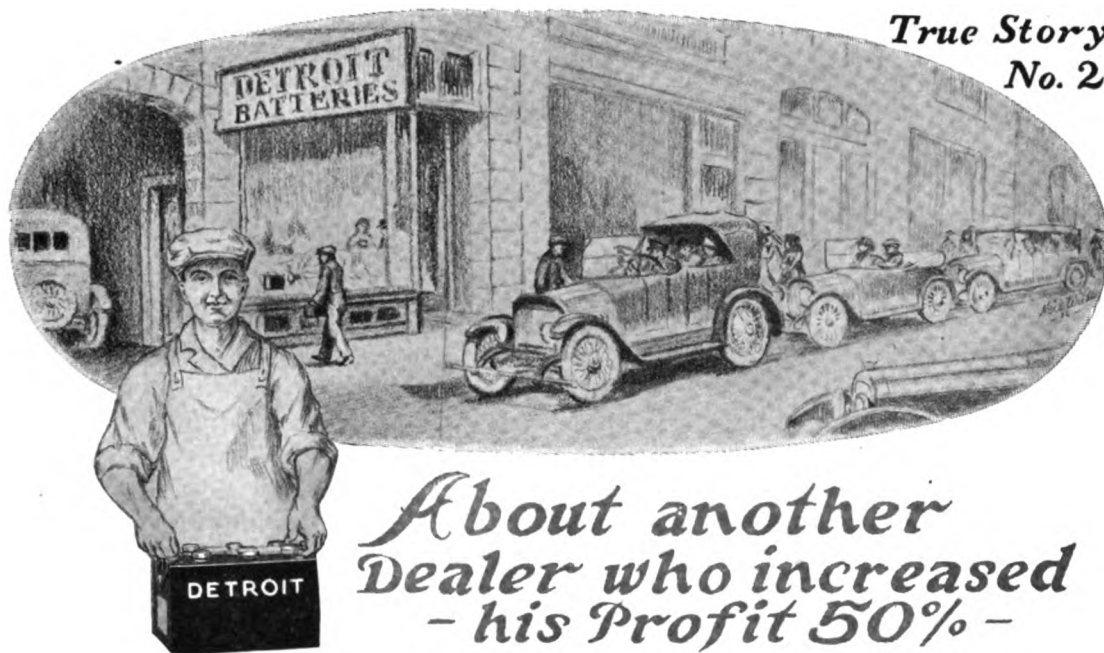
The Alabama Automobile Dealers' Association will hold a meeting in Birmingham January 22 to inaugurate plans for the year, including action to secure a garage lien law. R. J. Barr of Troy is president.

A large number of Minneapolis garages sent out advance notices putting their repair business on a cash basis January 1.

**Another Subscription Fakir.**—G. H. Small, of the Parker Garage, Parker, Ind., advises that he paid \$3.00 for two magazines and a hand-book on "Automobile Troubles and How to Remedy Them." The alleged publishers are the "Auto Troubles Co., Western Offices, Chicago, Ill." Mr. Small got a receipt for his \$3.00—that's all. Never heard from the "Troubles Co.," thus adding to his own troubles. This notice, like others under our "Look Out" heading is printed as a warning to other garagemen.

#### Garage Lien Bill in Kansas Legislature

A. A. G. O. Vice-President P. M. Kimball, Parsons, Kan., writes: "The New Jersey lien law has been introduced in the Kansas legislature by Senator Paul H. Kimball of this district and things look favorable for its passage."



**J.** T. ELSENHANS for several years ran a small machine and repair shop in Buffalo. He saw the remarkable possibilities in the battery business, secured an agency for a certain battery, installed complete repair and charging equipment, and began looking for business.

Business came, but it didn't stay. There seemed to be plenty of business in sight but Elsenhans soon found that a floating, shifting lot of customers never make a profitable business. It costs most of the profits on the first order to get a new customer and dissatisfied customers never bring in more. Permanent customers and a steady flow of reorders means a growing, profitable business.

Elsenhans found that the battery he was handling was not a good business partner. It more than offset his good work.

He experimented and tested various batteries and finally switched to the Detroit.

That was over a year ago.

Today he says—we quote his exact words—"I have scores of Detroit batteries that have been in service over a year, and not one has failed to give satisfactory service; not one has lost me a customer. And your service and the wonderful promptness with which you deliver orders helps me get business and hold it. Your service in my opinion could not be better."

Today J. T. Elsenhans has one of the fastest growing, most profitable battery businesses in the country. His profits during the past year handling Detroit batteries were 73% greater than for any previous year of his business.

Is it any wonder that he is happy and enthusiastic?

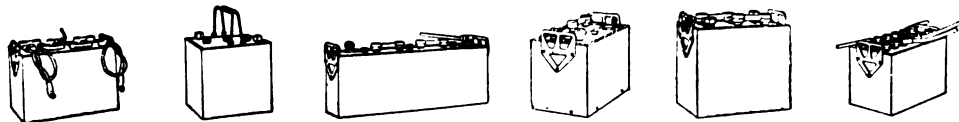
## DEALERS

Why not follow Elsenhans' example? Scarcely a city or town in the country but offers just as good an opportunity. The future of the battery business is wonderful in its possibilities. Two million and a half cars are running today. Another million and a half will be added during the next twelve months. And every owner is a possible customer—not for one sale but for continuous sales and service work. There is scarcely a locality today that has enough battery service stations.

### We Will Help You Start a Battery Business

Let us show you our proposition. It is the most complete and helpful ever offered by a battery maker. We will show you how to organize your business—how to get business—how to advertise. We will give you a complete course of instruction in battery repair work and even plan and help you in such work as financing and accounting. In fact, we will give you the benefit of the best battery business knowledge to be had anywhere and then provide you with the longest lived, most reliable battery made today, to help you hold your business.

*Write today for complete details and share in the big spring business profits.*



A Correct Type for Every Make and Model of Car

# DETROIT BATTERY COMPANY, Detroit

## History of the Michigan Garage Lien Law.

During the session of our legislature in the spring of 1915, our Michigan garage lien law was passed, writes L. C. Steers in the Michigan Auto Trade Bulletin. It is known as bill number 335, file number 273. This bill was introduced by Mr. O'Brien, of Iron River, for the Detroit association, and with the help of a number of garagemen and dealers throughout the state, the bill was put through, although the house committee amended it somewhat before it was finally passed.

When the house committee struck out the clause giving garagemen the right to repossess without process of law, they intended to leave the bill in such a form that the car could be repossessed by act of replevin. But as the bill is not as explicit as it might be in this respect, some of the judges have refused to issue a writ of replevin. Yet in a number of instances a writ of replevin has been obtained, the cars repossessed, and the owners forced to pay their just bills.

While this bill has enabled the garagemen of Michigan to collect a lot of bills that they otherwise would have lost, and while it affords us a lot of protection beyond the old mechanics' lien law, yet the bill is far from being as effective as it should be.

Mr. Steers believes there should be incorporated in an amendment to this bill a provision to repossess within ninety days by replevin. There should also be incorporated four penal provisions.

1. Making it a felony for a party who, having purchased a car on contract, runs up a bill at a garage, repair or service station, beyond an amount of say \$50.00 without first obtaining permission from the dealer holding the contract.

2. Making it a felony for a party selling a car upon which there is an unpaid bill at any garage, repair or service station, for which said car is liable to have a lien filed on same.

3. Making it a felony for anyone removing a car from a garage, repair or service station where he is running a monthly account or otherwise, without first arranging for some form of settlement with the proprietor. This clause would eliminate to a large extent the expense of having to replevin the car and would be giving the garageman and service station the same protection that a similar act gives to the hotel keeper.

4. Making it a felony for a chauffeur or other employe of a car owner to solicit or accept, or for a garageman to give any money or other personal consideration in order to secure or hold the patronage of said car owner.

## Short Cuts for the Shop

### MAKE \$1 EASY

Send us a description, with rough pencil sketch attached, of that new short cut of yours. We will present you with \$1 if it is acceptable for publication in these columns. This offer is open to employes as well as proprietors.

**T**HIS new department can be made the most interesting and most useful of any in this journal, or any other journal. The short cut in the shop means a long profit for the business, a short charge (comparatively speaking) for the customer, and (in the end) it will help to boost the salary of the mechanic. The long way of doing things means a long price, a dissatisfied customer, loss of trade and low wages for the mechanic.

The AMERICAN GARAGE AND AUTO DEALER is the organ of co-operation among garage men, shop men and mechanics with reference to practical shop matters, as well as in relation to organization affairs. We want your help in making this department successful, and we want you to put your ideas into this hopper and take out a dollar for each idea. The satisfaction of having passed something along that will benefit the craft is sufficient inducement alone, but the easy dollar made results in satisfaction *plus* that which will exchange for all of the material good things of life. Start right away and make some of these easy dollars.

## Advertising That Brings Results

### MAKE \$1 EASY

Send in specimen of advertising that has produced results, when it was used. results obtained so far as known, etc. If accepted and printed in these columns, we will present you with \$1. This offer is open to employes as well as proprietors.

**G**OOD advertising builds business. Good values and fair treatment of customers hold it. Advertising is the voice of the business. Without it many people will not hear of you. The idea of advertising is the idea of extension, of a longer reach, of greater opportunities for showing the public what you can do for them.

There are a number of forms of advertising. Do not mistake advertising to be merely newspaper space. That is one good form of advertising. There is outdoor advertising which includes hand-bills, signs, billboards, etc. There is what is called direct advertising which includes circulars, form letters, calendars, etc. In most instances advertising is not a one-legged affair. It needs two or more legs to navigate upon successfully. The kind of advertising to employ will depend largely upon your particular community environment. Size up your situation. Estimate the amount of money you can afford to spend for this purpose and then *go to it*.

There are no hard and fast rules governing advertising. What will work in one community may fall flat in another. What will work this year may fail next year. Good horse sense taken in connection with the palpable facts which stand out in your community point out unerringly the wise course. What you need is suggestions for consideration.

This department is intended to assemble specimens of these different forms of advertising and present them to you for your consideration. Something neat and to the point with selling value in each of the different departments of advertising and publicity will be presented from month to month. We want your help. Make a dollar easy by sending us in a specimen of advertising.

It has been said that "goods well advertised are half sold." Apply this maxim to what you have to sell in the way of merchandise and service. Let both employer and employe help along in this good work.

## Here is a Profitable Line for Dealers and Garages

An automobile storage battery will last from a few months to years—depending entirely upon the attention and care bestowed upon it by the owner. So batteries must be replaced.

We have worked out a plan that will prove profitable to automobile dealers and garages who desire to become USL Service Stations, Agents or Dealers.

Tear off the corner of this Ad and mail it at once to the USL factory or nearest USL branch.

### U S Light & Heat Corporation

Drawer "G," Niagara Falls, N. Y.

Branches in: NEW YORK CLEVELAND DETROIT  
CHICAGO KANSAS CITY SAN FRANCISCO WASHINGTON, D. C.

*Service Stations in Principal Centers*

U S L—Niagara Falls, N. Y.

Please mail me at once your plan for

Service Station } .....  
Agency } .....  
Dealer } .....

Name.....

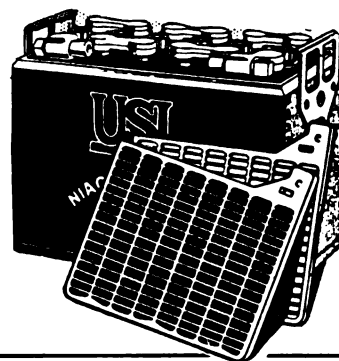
Address.....

City.....

State.....



**STORAGE BATTERIES**  
with the machine-pasted plates are sold on a 15 Months Guaranteed Adjustment Plan.



## This Sign Means Big Profits

To give your customers real satisfaction---To replace springs in the shortest possible time---To make good profits with little work---use

**HIGGINS QUALITY SPRINGS**  
Used for Replacements

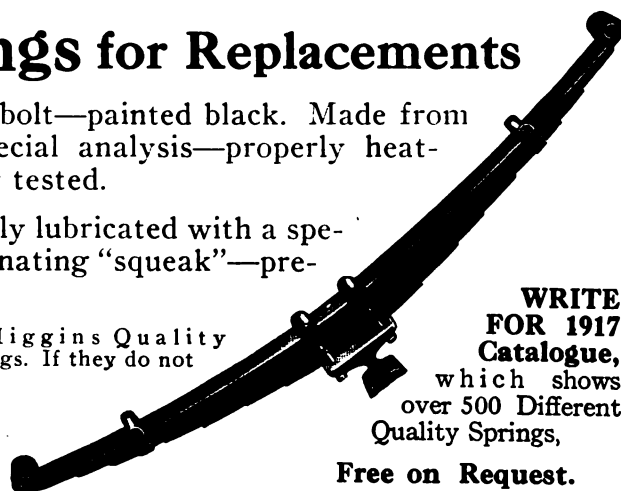
### Higgins Quality Springs for Replacements

They are guaranteed—made without center bolt—painted black. Made from best grade of motor car spring steel of a special analysis—properly heat-treated, scientifically constructed and rigidly tested.

Equipped with Rebound Clips—leaves properly lubricated with a special high grade spring leaf lubrication, eliminating "squeak"—preventing rust.

**ASK YOUR SUPPLY HOUSE** for Higgins Quality Springs. If they do not handle them, write us and we will see that you are supplied. Be sure and ask for our catalog.

**HIGGINS SPRING & AXLE CO.,** RACINE, WISCONSIN



**WRITE FOR 1917 Catalogue,** which shows over 500 Different Quality Springs,

Free on Request.

### Young, But Successful.

Although barely of age, born in 1894, Floyd P. Etheridge, Sparta, Georgia, is proprietor of a highly successful garage: the Etheridge Garage of Sparta.



His education includes the Sparta high school, Perry Rainey Institute and A. & M. College. In 1913 he decided to go into the automobile business, and began as helper with the Oakland Motor Car Co., Atlanta, Georgia. He afterwards returned home and worked as mechanic in the Sparta Garage. Early in 1915 he started the Etheridge Garage and since has been proprietor and manager.

He is a valued member of the A. A. G. O. and also is a member of Modern Woodmen of America.

Mr. Auto Dealer, you can't afford to miss the Chicago Auto Show and A. A. G. O. Convention, in Chicago, week of Jan. 27-Feb. 3.

### WHEN A FELLER NEEDS A FRILND



## Windows That Pull Business

### MAKE \$1 EASY

with your little kodak. Send in photo of window that has pulled business, when used, results obtained as far as known, etc. We will send you \$1 if it is accepted and printed in these columns. This offer is open to employees as well as proprietors.

**H**OW much rent are you paying? If you own the building you may say you are not paying rent, but you are, only you are your own landlord. The window space or frontage is what pulls down the rent money for the landlord, which means that this space is the most valuable space you have and that you should get out of it the largest possible returns.

You have heard a great deal about the "circulation" of a newspaper. Well, among window advertising experts they talk just as much about circulation as the newspaper publishers do. The circulation of a window is gauged by the number of people who pass by during the day or any other given period of time. Its value is determined by its circulation. What you put in the window may be likened to the "copy" in a newspaper or magazine advertisement. What kind of "copy" are you running in that valuable window of yours?

Make dollars easy by sending in snap-shots of windows that have pulled business. We can all theorize about windows, whether a single line of goods or whether a miscellaneous assortment should be displayed, whether price tickets should be featured strongly in the window or left out, but the *test* of the window is its pulling power. A "gripping" window will take hold of the passer-by, wheel him half-round, walk him into the place and make him ask about the goods on display. The window display that will do this is a good window, providing the prospective customer lands inside in a frame of mind to listen favorably to what you have to say about the goods he is interested in.

In some locations window advertising is depended upon more than any other form of advertising to sell goods. In these locations there is a large circulation. Here every attention is given to the window trim and display. High-priced experts are employed. In other locations where the circulation is relatively small, less dependence is placed upon window advertising but it continues to be of sufficient value to receive careful attention. In no location should a window go to waste. In many garages, women employes have charge of the windows and produce some winning effects.

The psychology of all advertising involves the idea of suggestion—reminding one that he or she needs or can use a particular article. The garage window property used will suggest the purchase of certain articles to patrons every time they come to the garage or pass by. It heralds the fact that you have in stock goods that the patron or prospective patron may think that he should go elsewhere to obtain.

Send in pictures of good windows with enough data to indicate why they are good. An easy dollar will come your way, in addition to helping along a cause that will put merchandising ginger into our line of business and secure for it greater public attention and respect.

### Iowa Auto Accessory Jobbers Combine.

The States Auto Supply Co. and the Hippee Motor Supply Co., both large jobbing accessory houses at Des Moines, Ia., have been merged and are now styled the Hippee-States Co., with George P. Hippee as president, H. F. Shepherd, vice-president and general manager, and W. W. Maish, secretary and chairman of the

board. The consolidated business has been transferred to 706-710 Mulberry street. Mr. Shepherd is a good organization man and the dealers and garagemen of Iowa have found him and his associates helpful allies in their business-building efforts.

Mr. Auto Dealer, you can't afford to miss the Chicago Auto Show and A. A. G. O. Convention, in Chicago, week of Jan. 27-Feb. 3.





## ***You men who know Spark Plugs***

Compare any plug you know with this sturdy, one-piece, leak-proof MICA plug—and we know what plug you'll sell during 1917.



### ***There's the Answer***

ANSWER Spark Plugs are insulated with wrappings of sheet mica laid parallel to the electrode **on the inside of the shell**. The ANSWER is insulated from TOP to BOTTOM. There is no possibility of short circuit. No oil can leak through.

Answer Plugs have NO GAS-KETS or BUSHINGS. Can't leak

compression. They will not break, crack, carbonize, or fall apart.

**GUARANTEED to give perfect service for a minimum of 10,000 MILES.**

**Ford Special—75c Other Sizes—\$1.00**

*The* **ANSWER** SPARK PLUG

*"The Plug That's Different"*

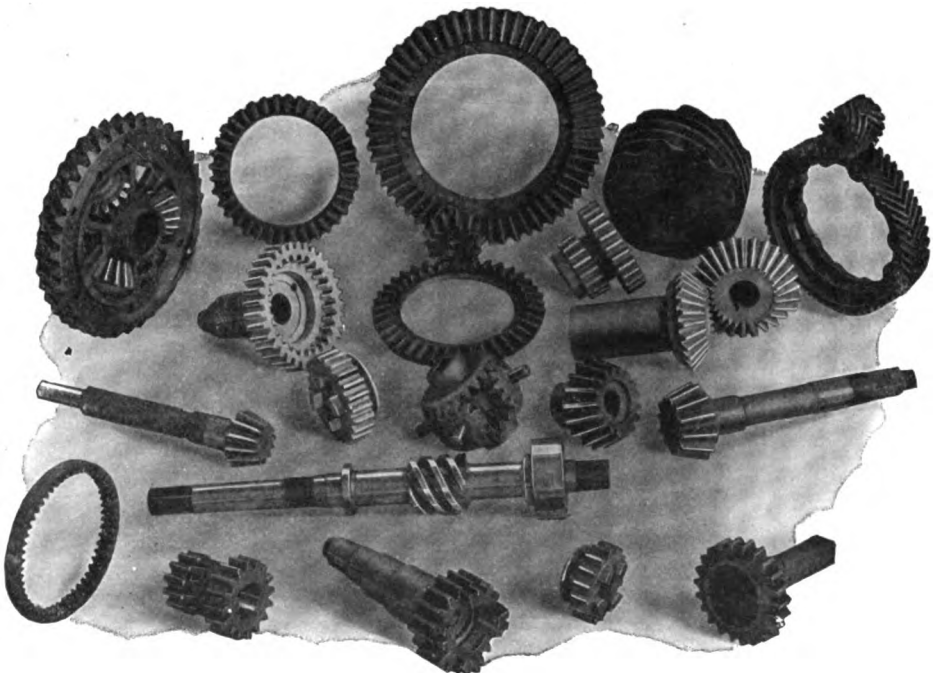
You can make money selling Answer Spark Plugs. Write—now—for our liberal discount to dealers.

**HILBORN COMPANY, Inc., 531 Canal St., New York City**

# **WILLIAM GANSCHOW COMPANY**

## **GEARS for Automobiles Our Specialty**

**YOU DO NOT HAVE TO LAY UP YOUR CAR** and send to the manufacturers for repair parts or replace gears, as we are prepared to furnish promptly transmission, differential or timing gears, and any other part made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or Foreign manufacture. Workmanship and quality guaranteed.



**1002 WEST WASHINGTON BLVD.**

**CHICAGO, ILLINOIS**

### New Lien Bill for Illinois.

Chairman H. E. Halbert, president of the Chicago Garage Owners' Association and chairman of the Illinois Association legislative committee, is at work on a new draft of a lien law to be introduced into the Legislature at Springfield with the united backing of the retail motor and garage trade.

"We like the New Jersey law," said Mr. Halbert, "but some of the trade are opposed to so drastic a measure. We will go as far as we can to protect garagemen and make the enforcement of liens easy and inexpensive. But we want to put a united retail trade behind it so far as possible."

Counsel for the various bodies, including the Law Department of the A. A. G. O., will be used to put the bill in the best shape possible—that is, to make it as near flawless as a law can be framed and calculated in every respect to win over all honest opposition.

### Yellowstone Highway Garage Association Formed.

At a meeting of a number of prominent garage men of the state held at Thermopolis, Wyo., December 4th, the Yellowstone Highway Garage Association was organized and incorporated. The association has as its chief object the insuring of better service to patrons of the garages along the line of the Yellowstone highway.

A grievance committee was appointed with power to adjust all grievances or complaints made to the association by tourists in regard to the service rendered by the members. This means service and efficiency at prices which will be within the reach of every auto owner, and the leading garage men along the highway are members of the organization.

The officers elected for the first year are: Gus Holms, Cody, president. Hosea M. Hantz, Thermopolis, vice-president. R. M. Lamont, Cheyenne, secretary and treasurer.

The board of directors was also chosen and is composed of the following members: F. R. Dildine, Cheyenne; Lee F. Rice, Douglas; B. B. Lummins, Casper; Hosea M. Hantz, Thermopolis, and W. W. Murphy, Basin.

The A. A. G. O. and the AMERICAN GARAGE AND AUTO DEALER extend to the new organization their sincerest wishes for a career of usefulness and will gladly render assistance to that end.

### Iowa Retail Auto Trade Meet.

The Iowa Retail Auto Dealers' Association held a successful convention at Ft. Dodge, January 9 and 10. Jacob Friedman, Dyersville, presided and General Secretary C. C. Nye delivered one of the principal addresses, taking for his topic "The Association; Its Benefits." O. R. McDonald of Des Moines told in an effective manner how to turn losses into profits.

John C. Thorpe, secretary of the Illinois Association, spoke on "The National Movement," and a letter from C. M. Carr, secretary of the American Association of Garage Owners, extending its co-operation and support to the Iowa work, was read.

The campaign for an effective garage lien law was reported as well under way with the bill drafted and ready to introduce. The outlook for its passage is very encouraging.

An address by Wm. M. Webster, commissioner of the National Association of Accessory Jobbers, was full of meat and well received. Other papers read were: "The Used Car Problem," by I. A. Murphy, Cedar Rapids; "Winter Business," by Ray Sherman, New York; "Shop and Shop Practice," by Prof. Leavell, Iowa State College; "Legal Obligations," by E. V. Cox, Des Moines; "Manufacturers' Service Policy," by R. E. Beedee, Davenport.

Officers were chosen as follows: president, Jacob Friedmann of Dyersville; vice-president, O. R. McDonald of Des Moines; treasurer, E. J. Miles of Newton; secretary and manager, C. C. Nye of Des Moines; board of directors, Frank Anderson of Keokuk; W. B. Swaney of Carroll; Gus Mandel of Sioux City; A. C. Heath of Ft. Dodge; C. P. Hart of Des Moines; E. C. Dickinson of Algona; O. A. Repass of Waterloo; R. E. Beedee of Davenport; A. H. Case of Charles City; Paul Lattner of Cedar Rapids; J. E. Doze of Humeston.

## Come to A. A. G. O. Convention, Chicago Show Week

ALL reports indicate that the Chicago Automobile Show is going to be the biggest show of its kind ever held in America, if not in the world. It will include more exhibits of automobile accessories and garage equipment than any show ever previously put on, and therefore will possess greater attractions for the garageman and auto dealer than any of its predecessors.

During show week, the annual convention of the American Association of Garage Owners will be held, and the garageman, shopman and dealer who will come to Chicago during that week, visit the show and attend the convention, will gain a liberal education in matters which will be new and valuable to him that will a dozen times outweigh the cost of the trip. Hotel rates are low and transportation cost is one-third less than in years gone by. Our advice to members of the craft, and especially members of the Association, is to begin at once to make arrangements to come to Chicago during the week of January 27th to February 3d with a special effort to attend the A. A. G. O. Convention, February 1st and 2d.

Please fill out the attached coupon and mail to National Headquarters, with any request you would like to make regarding hotel accommodations or other information and service that will increase your convenience and comfort during your stay in Chicago.

### A. A. G. O. Convention Coupon

C. M. CARR, Secy.-Treas.,  
American Association of Garage Owners,  
53 W. Jackson Blvd., Chicago, Ill.

This is to advise that I will be in Chicago during "Show Week," and will attend the Annual Convention of the A. A. G. O. at the Auditorium Hotel, Thursday and Friday, February 1 and 2.

☐ Please reserve hotel accommodations for ..... persons, rate to be \$..... minimum, and \$..... maximum, for each person.

☐ Please reserve tickets for the Banquet on Friday evening, for ..... at \$2 each.

☐ I would also like to have information sent me concerning the following:

Address..... Name.....

Sessions open daily at 10 a. m. and 2 p. m. Banquet Friday evening, at 7.  
Make Association Headquarters your mail address while in the city.

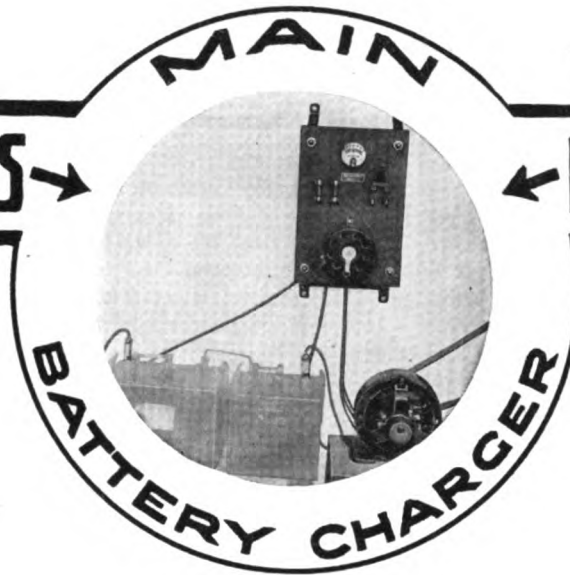
### The Akron Auto Show.

It was "the best little auto show ever held," is a terse way of describing the Akron, Ohio, auto show given by the Akron Auto Dealers' Show Association, December 9 to 16. Many of the latest models in cars and a large number of new accessories were shown and exhibitors reported good sales. Grover Reeves was manager of the show, receiving the co-operation of the association membership comprising the following:

C. C. Lowe, J. H. Wiener, E. G. Grady, H. A. Roberts, W. E. Beynon, A. O. Wood, Robert A. Noah, W. E. Case, D. W. Thornton, Paul Romig, Andrew Auble, Jr., M. F. Merrill, F. C. Sibbald, John H. Shutt, Perry Denmead, W. J. Boardman, W. T. Tedder, A. M. Allen, O. W. Bashaw, C. W. Kane, R. C. Glass, C. E. Albright, T. Oscar Evans, A. V. Waldo, W. E. Reld, C. E. Maloy, Frank M. Prevey, H. K. Pontius, W. F. Jones, W. P. O'Neil.

# MORE PROFITS →

In charging batteries from a lighting circuit, most of your profit is consumed in the resistance necessary to reduce the voltage. Eliminate this waste and put this department on a profit yielding basis. The Main Battery Charger makes you independent of a lighting circuit and enables you to show a handsome profit.



# ← BETTER SERVICE

Render a service that is valuable to your customers. Teach them to rely upon you for prompt, efficient battery charging service. A Main Battery Charger enables you to render such service at all times. Any voltage or combination of several voltages, not exceeding 30, in batteries, can be charged at one time (as from one to five 6 volt batteries, at one time).

The Main Battery Charger generates its own electricity, and can be driven from a line shaft, engine or other power in use, incurring little or no operating expense, making your charge for battery charging service almost wholly a net profit.

Designed for practical use. Manufactured to last.  
Price, \$55.00 Prompt Deliveries

## MAIN ELECTRIC MANUFACTURING CO.

Pittsburgh, Pa.

# Do away with all CARBON troubles forever

A Success for the Dealer—  
A Success with the Car Owner—

There's a *real* demand for a *real* carbon remover and car owners are quick to realize the value



We need more live dealers to help us distribute. We do not ask our dealers to buy our goods until they have felt the demand, so we have a special co-operative selling proposition to submit to you.

The HART-BELL CARBON REMOVER is a device for introducing live steam into the cylinders of the motor. Live steam is the best agency for loosening carbon. The carbon is blown out through the exhaust while the motor is running. The HART-BELL CARBON REMOVER is quickly and permanently attached and can be used as often as desired. Sells for \$5.00 and there is good profit for you.

Write at once for the selling plan.

UTILITY PRODUCTS CO.  
823 Times Bldg. New York City  
or  
MOTOR EQUIPMENT CO.  
1436-38 S. Michigan Ave. Chicago, Ill.



Price \$5.00

The HART-BELL is absolutely guaranteed to you and to car owners

Can be  
put on  
any car

# POLAC

"Ask the man who's used it."

## CLEANS AND POLISHES AUTOMOBILES

The only known polisher and cleaner that will remove Road Oil and Tar.

No hard rubbing—apply, leave it set a while, wipe off.

Preserves, cleans and polishes the varnish.

Dealers will find a ready sale for POLAC.

Order a sample can and be convinced.

## Motor Equipment Company

1438 Michigan Avenue  
Chicago, Ills.

# Auto Accessories and Garage Equipment

## The Tungar Rectifier.

The General Electric Company, Schenectady, N. Y., has a notable display at the automobile show in New York City. The display includes several types of motor generator sets, a Waynelite transformer, a welding transformer, a four-section slate panel showing different arrangements of charging regulating devices, the Entz magneto transmission and controller directly connected to gasoline engine and many other devices familiar to the trade.

But the one exhibit not familiar to the trade is the Tungar Rectifier, shown in three types. All are the last word in devices to change the alternating current usually supplied on commercial circuits into the direct current necessary in charging storage batteries.

"Tungar" rectifiers were developed as the result of a real need. All storage batteries should be recharged at times, and in the cold weather the demands are particularly frequent because temperature, excessive use for starter, lights and horn and the less numerous and shorter periods during which the generator is recharging all combine to necessitate the application of current from an outside source.

These rectifiers have a range of capacity that extends from the requirements for motorcycles to those of an automobile service station (from two to six amperes and from  $7\frac{1}{2}$  to seventy-five volts.)

The "Tungar" operates on a new principle for rectifiers. The discovery that made it possible is the perfection of the small bulb similar to that of an incandescent lamp, in which rectification of the current takes place. This bulb is filled with an inert gas and contains a tungsten filament and a graphite "anode." It screws into a lamp socket in the outfit. These bulbs are inexpensive and good for hundreds of hours of service.

A black japanned casing with perforated top furnishes the mounting and encloses all live parts. This casing carries the bulb, a fuse to protect against reversal and other overload and the compensator which reduces the alternating current without wasteful resistance and excites the tungsten filament.

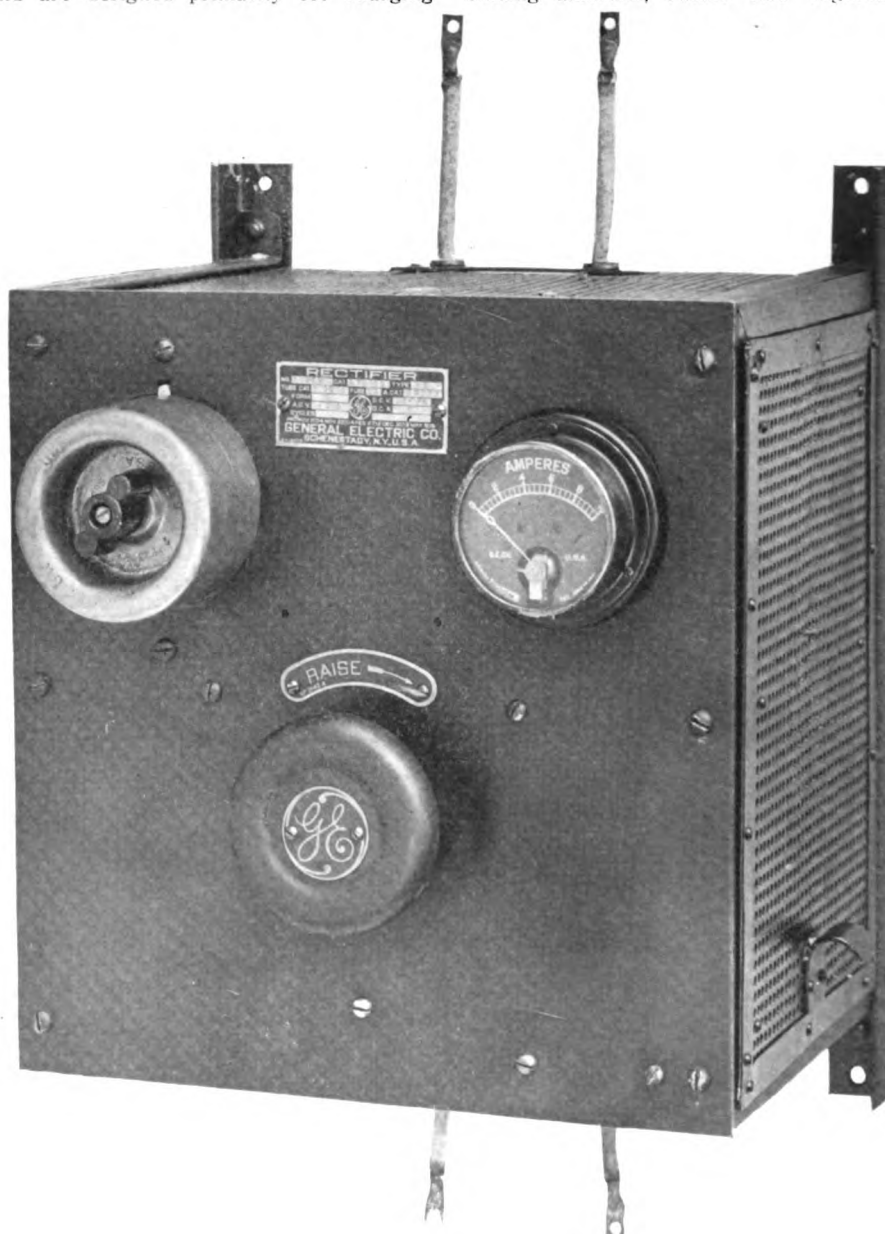
For charging, the rectifiers need only be connected to a convenient lamp socket and the pair of leads attached to the proper posts on the battery. In the public garage type the desired voltage must also be set.

The smallest "Tungar" is of two amperes maximum capacity. From a 115 volt. 60-cycle A. C. circuit it will charge three lead battery cells at two amperes; six cells at about one ampere and eight cells at three-fourths of an ampere. Between these fig-

ures the charging rate is proportionate. The maximum limitation is 125 volts at which it charges with a slight increase in current output. At the minimum of 105 volts, the current output is slightly lower. At ten cents the kilowatt hour for current, the cost is about one cent the hour, including tube renewal costs. The weight is about eight pounds.

Medium size "Tungar" rectifiers have capacity of six ampere,  $7\frac{1}{2}$  to fifteen volts, and are designed primarily for charging

$7\frac{1}{2}$  to seventy-five volts. It will charge one to ten three cell storage batteries from a 115 volt, 60-cycle, A. C. circuit. A compensator with fifteen taps is part of the device and a dial switch for instantly adjusting voltage according to the number of batteries to be charged. Amperage can be regulated between limits of one and six amperes. A single three cell battery may be charged by itself or any number up to and including thirty cells. The controlling devices including ammeter, switch and regulating



three or six cell automobile starting and lighting batteries in home garages. This type is designed for 115 volts, 60-cycle current, but may be used on 105 to 125 volt circuits. The weight is about fifteen pounds.

The largest type of "Tungar" is designed for use in public garages and service stations and has a capacity of six amperes,

handle are located on the front of the case. If the A. C. should be interrupted, the batteries cannot discharge but will start again when the current comes in again.

Summed up, the advantages of the "Tungar" are: Low first cost, low operating cost, high efficiency, low bulb cost, self-starting, easily installed, no moving parts,

**A. A. G. O. insurance plans permit more net profit, see pages 25 and 26**



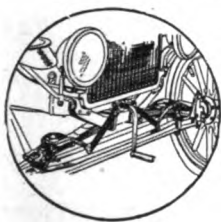


**"In the  
days of real sport"**

Be a boy again—get that  
"coasting sensation" with

**W @ C**

the original Double Arm  
SHOCK ABSORBER



W. & C. Equipment take the jolt  
out of winter driving.

As only a few choice territories are  
still available for assignment, re-  
liable dealers should write or wire  
for particulars immediately.

**Phillip H. Webber & Co.**  
Hoopeston, Ill.



**Edison**

**Alkaline  
Lighting  
and  
Ignition  
Batteries**

**Batteries and Supplies**  
carried in Stock at our

**Service Station**

Every Garage Owner should have information  
about the Edison Battery on his desk.

Write us.

**EDISON STORAGE BATTERY CO.**  
Orange, N. J.

Chicago Address: 2025 Michigan Avenue



## Here's a *Real* Carbon Remover

**T**HERE are just as many *sick motors*  
as there are *sick people*—and there's  
just as much money to be made in cur-  
ing them. Tell your trade what carbon *does*  
to their motors; then tell them what AD-EL-ITE  
Carbon Remover *does* to the carbon. Show them  
how it knocks spots out of motor "knocks"; how it  
will give them more mileage on less gas, and *cut*  
our trouble and repair bills. Then sell them Ad-  
el-ite Carbon Remover. You've done your cus-  
tomer a good turn and made  
a good profit.

### SPECIAL

Sufficient AD-EL-ITE  
Motor Carbon Re-  
mover to thoroughly  
clean an ordinary car  
twice will be sent for  
85c, prepaid.

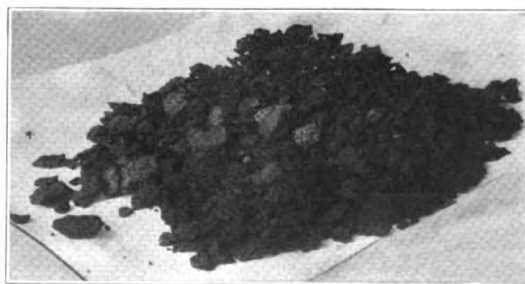
Sold in convenient sizes  
from 1/16 gal. to 1 gal. A  
sure-fire repeater and guar-  
anteed harmless to any-  
thing but carbon. *Write  
now for attractive dealer  
proposition.*

Address Department A

**ADAMS & ELTING CO.**

716-726 Washington Blvd., Chicago

Toronto — Brooklyn



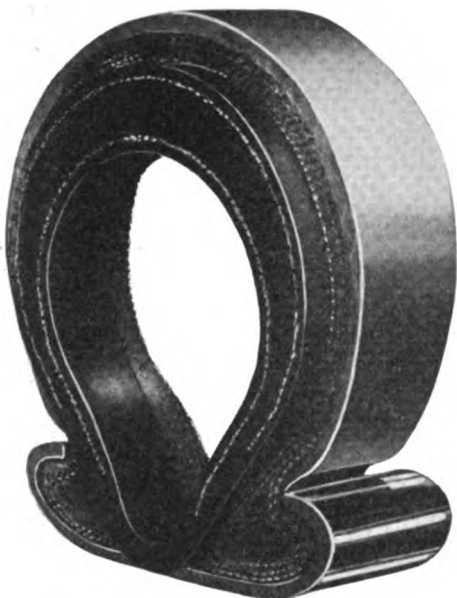
The result of one cleaning. Comes out in chunks



no oiling or greasing, extreme simplicity, long bulb life, no fire risk, batteries cannot discharge through rectifier.

### Sternwear Inner Tube

Since the advent of the motor car every owner has looked forward to the coming of a really trouble-proof automobile tire, and during the past twenty years many attempts have been made to produce such a tire. Sternwear pneumatic tubes have, it is claimed, solved the greatest of all motor problems. They are designed to give upwards of 20,000 miles service without puncture or blowout, said to be successfully accomplished by their patented constructions. These tubes have been subjected to almost every imaginable test to prove their remarkable wear-resisting qualities and that they are destined to entirely supplant the use of present-day tubes, is said to be the belief of many men prominent in the automobile field.



Sternwear Inner Tube.

Sternwear inner tubes are the product of the Sterns Tire & Tube Company of St. Louis, a million dollar corporation, and Edward O. Sterns, president of the concern, is their inventor. The personnel of the Sterns Company includes many men well known in the automobile world, among them General Sales Manager W. L. Burgess, who has gained a national reputation in motor circles through the many years he has been identified with the industry. Until he joined the Sterns organization, Mr. Burgess was general sales manager of the Dorris Automobile Company of St. Louis, and prior to his connection with that concern he was associated with the Firestone Tire & Rubber Company in an executive capacity.

### Star Tire Is in the Field

Rapid work is being accomplished by the Star Rubber Company, of Akron, Ohio, to prepare the large plant with its 100,000 square feet of floor space for extensive

manufacturing operations in the tire field. The Star Rubber Company, organized in 1910, has manufactured to a large extent rubber goods for druggists and surgeons. In 1916 the company started manufacturing tires in a small way. With the reorganization of the company and the increase of the capital stock to \$500,000, with L. H. Firey, president and treasurer, R. L. Robinson, vice-president, and O. L. Weaver, secretary, and with many prominent Akron men of wide business ability as stockholders and directors, the exclusive manufacturing of tires was determined upon. Every Star tire will have one more ply of fabric than is ordinarily used, 3-inch tires having four plies, 3½-inch five plies, 4-inch six plies, 4½-inch seven plies and 5-inch eight plies. Extra tread thickness will be used and every known improvement made to produce a better tire. The "All Star" tread promises to be a sensation in the tire field. It carries a guarantee of 5,000 miles. Star tires will be shown at the Hotel Astor during the New York show and at the Auditorium Hotel during the Chicago show.

### Ever Tight Piston Rings

More and more, Ever Tight piston rings are being adopted as standard equipment by automobile manufactures. Also, they

hold a prominent place in accessory stocks.

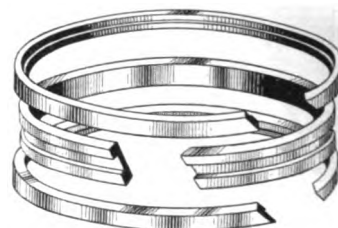
The Ever Tight ring is of three-piece construction, as shown in the illustrations.



The assembled ring amounts to a solid piece of metal, owing to the interlocking features. The claims for the ring are that



it provides perfect combustion, provides more power and decreases maintenance cost. Standard sizes are made for any size



of cylinder. The ring is manufactured by Ever Tight Piston Ring Mfg. Co., 3032-4 Market street, St. Louis, Mo.

### Gordon Specialties in Demand

That car owners are rapidly waking up to the importance of protecting their investment is shown by the phenomenal growth of The J. P. Gordon Co. of Columbus, Ohio.

Although this factory has made two large additions to its plant during the past twelve months and now has an active working floor space of more than 100,000 square feet, they have been compelled to

sands of owners who in the past have not thought such things necessary, are now demanding them. They have come to realize that these things afford more comfort and pleasure in riding; greater economy and better service and that cars thus protected have a greater resale value that will more than offset the cost of such specialties.

Other specialties for which the J. P. Gordon Co. report a very active demand are top slip covers and top re-coverings for all makes of cars in both mohair and rub-



ber cloth; the "Gordon" Convertible Winter and Summer Top for Ford cars and especially the "Gordon" Convertible Top Attachment for Fords. This top attachment enables any Ford owner to convert his car into a regular closed winter car at very small expense. It consists of a pair of hard wood side walls which may be used in conjunction with the regular Ford top, making it absolutely storm, wind and cold proof.

Seat covers, tire covers and radiator and engine robes have become essentials with car owners who appreciate the importance and value of satisfactory and constant service, the elimination of needless waste and expense and the appearance value of well dressed cars. In consequence, thou-

put on a night shift of over 200 power sewing machine operators and will add this as rapidly as new operators can be secured and trained.



**Ford Owners  
CAN NOW HAVE  
BRIGHT  
LIGHTS  
at Low Speed**

This is only possible with the Aske Automatic Voltage Regulator. Above lights are obtained at lowest engine speed; each lamp operates independently, hence never without lights. Strong, steady beams of light always assured.

Almost five times as much light generated with the Aske Automatic Voltage Regulator.

These are the reasons why it will pay you to supply the demand for this popular accessory.

**Aske Automatic Voltage Regulator Co.**  
Providence Building, DULUTH, MINN.

**These Machines  
Will Pay You Big  
Dividends**

To make the most of your repair business you must have first-class, up-to-date equipment. The two machines described on this page are making money for many garages and will do the same for you.

Reboring old, worn and scarred Ford cylinders is a highly profitable business in any section. The Davis Cylinder Reboring Jig and Reamer enables the small shop to do this work as well as the largest establishments with extensive machinery. It makes the Ford motor like new.

**THE DAVIS  
CYLINDER  
REBORING  
JIG AND  
REAMER**



**The Davis Milling Attachment and Compound Table**

is another dollar-getter for the garage man. Clamps to any drill press table, with Dove-tail Cross Slides, operated with screws and ball cranks, by hand. Saddle is graduated and swivels to any angle. Table is slotted for clamping down work, chuck or vise. Especially adapted for small shops such as blacksmiths, repairmen and automobile garages. It will cut key seats and mill cams. For use with end mill, fish-tail cutter or formed cutters.

*Write for Circulars and Pr*

Manufactured by  
**THE HINCKLEY MACHINE WORKS, Hinckley, Ill.**



# HY-WATT

TRADE MARK

**We want aggressive  
representatives to  
push the sale of this  
popular new battery—**

The HY-WATT Battery is something brand new on the market and has behind it years of experimentation with a confirmatory record of having made good under severe tests.

Just think of a battery with only two points of connection, no matter how many volts or amperes you may need. All HY-WATT Batteries have long life and are guaranteed weatherproof. Especially advisable for long time service; minimum deterioration.

HY-WATT batteries are greatly in demand and offer you an attractive margin of profit—more than twice that of the ordinary round cell.

*Write for particulars*

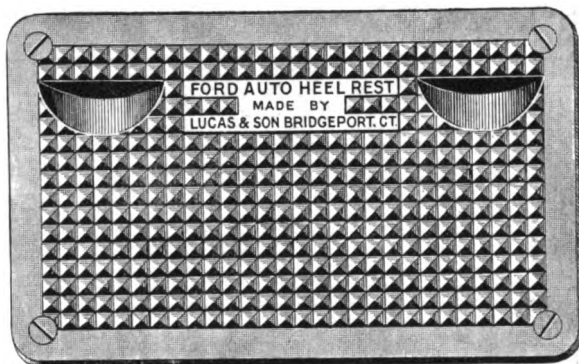
**The Cleveland Battery  
and Electric Company**

**Cleveland, Ohio**



### Ford Auto Heel Rest.

J. L. Lucas & Son, Bridgeport, Conn., have added a Ford Auto Heel Rest to their previous line. It is built on the same



general plan as the widely-sold Auto Heel Rest made by Lucas & Son.

The pyramids and raised letters are of frosted aluminum with a  $\frac{3}{8}$  in. polished band surrounding the neat appearing plate. In use it is not so much to rest as to locate the heels; offering a decided protection to the rubber matting. The Lucas heel rest locates the heel for both the clutch and brake pedals and allows the reverse pedal to be pushed with the heel. The price is \$1.00 each, with a liberal discount to the dealer.

### Halladay Can Tipper.

L. P. Halladay Company, Streator, Ill., are busy with orders for their Halladay Can Tipper.

The illustration shows how the tipper



works. Either a square or round 5-gallon can fits exactly into the tipper. In operation, one hand holds the measure and the other easily pushes the can to a position where its contents will pour readily.

There is no lifting, with the consequent spilling of oil on the floor or on the clothes and hands of the operator. The Halladay tipper is made entirely of steel and is constructed to last a lifetime. The price of \$1.75 is made good from the loss of oil alone.

### Aske Voltage Regulator.

The Aske Automatic Voltage Regulator absolutely controls the delivery of the current to the lighting system. In standard automobile construction the magneto is geared direct to the engine. The faster the engine goes the faster the magneto

runs, and the current to the lighting system is correspondingly increased. With the engine running slowly this process is reversed; the magneto runs more slowly

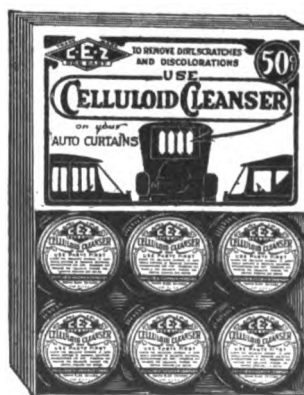
and a decreased current goes to the lighting system.

Here is where the Aske Regulator does its work. It controls and regulates the flow of current, keeping it steady at all times. In brief, it gives a bright light at all speeds; permits an independent operation of the lamps so that you are never without light; prevents burning out of lamps by excess voltage; permits the use of lamps from six to nine volts and twelve to fifteen candle power; allows the dimming of lights to meet legal requirements; permits tail light connection; is indestructible, fool-proof, and a necessity rather than an accessory.

The Aske Regulator is a simple device and can be attached to any Ford car of 1915 or later in a few minutes. It retails at \$5, with \$1 added for the dimmer. It is manufactured and sold by Aske Automatic Voltage Regulator Company, 307 Providence Bldg., Duluth, Minn.

### Celluloid Cleanser.

The Celluloid Cleanser Company, Tower building, Chicago, announces that it has just introduced on the market a new celluloid cleanser which is the only preparation of its kind guaranteed to positively remove dirt, scratches and discolorations



from auto curtains. Heretofore there has been no satisfactory method of cleaning celluloid automobile windows. This cleanser

polishes the surface, thereby eliminating the rough spots which retain the dirt.

Neither, it is said, will snow or rain stick to the celluloid after it has been cleaned.

Owing to the increasing popularity of celluloid windows in automobiles it is predicted that this cleanser will meet with a big demand.

The cleanser is composed of paste and powder, packed in a very attractive lithographed can, which will retail at 50c.

### The Wilmo Manifold.

The Wilmo Manifold, manufactured by The Whittier Company, First National Bank building, Chicago, is being pushed by educational methods based on actual tests.

The claim is made, for instance, that the use of the Wilmo Manifold increases gasoline mileage by forty-two to fifty-four per cent. Then the claim is backed up by official A. A. A. tests December 4, 1916, in Mishawauka, Indiana. In one test a Ford car was tried out on straight gasoline and showed a mileage record of 19.6 per gallon. The standard intake and exhaust manifolds were then removed and the Wilmo combination manifold was installed. The mileage with straight gasoline jumped to twenty-eight per gallon. Then half gasoline and half kerosene were tried, with a record of 26.6 miles per gallon. This was an in-



crease of more than a third in mileage and also a decrease of about twenty-five per cent in fuel cost. Tests with other cars showed a higher increase in mileage, up to fifty-four per cent.

All this is brought about by the construction of the Wilmo manifold. The ordinary manifold does not heat the fuel to a sufficient extent to allow of its complete vaporization. The Wilmo construction is such that the gasoline is forced against a hot plate and is completely vaporized, entering the cylinders as a light, superheated and highly combustible mixture.

It is claimed for the Wilmo manifold that it insures the complete utilization of every particle of the gasoline, leaving nothing for the formation of carbon. Further claims are that the car gets away immediately with all cylinders hitting; that there is no stalling, bucking or back-firing and that it virtually abolishes all valve and carbon troubles.

The Whittier Company has on the press a complete story of the Wilmo Manifold and advises that early applications be made for it. For different machines the retail prices of the Wilmo run from \$7.50 to \$15.00, with liberal dealers' discounts.



## GRUS CHAINS

**Have the "Sure Grip for Any Trip."** Made to fit any wheel or tire, for pleasure cars or trucks.

The chain problem has been solved at last. Tire chains have long been considered a necessary nuisance by the car owner and a costly nuisance too. Putting them on is a hard, tedious job—especially in a mud hole. They are equally hard to take off, so many a motorist leaves them on when they are not needed—thus grinding tires to pieces. GRUS EMERGENCY CHAINS overcome this tire chain inconvenience. They can be put on in a mud hole as easy as on an asphalt street. No digging or jacking or pushing or hauling. When through the bad places, they can be removed as easily as they were put on, thus saving tires and chains.

**IN AGAIN**

The right idea for safety, pleasure, economy. Dealers—No matter what kind of chains you have been handling, it will pay you to investigate GRUS. They are the chains for 1917—a big sale is assured. Write today and get your share of the profits right from the start. The ease with which they can be attached and removed insures their popularity and ready sale.

**ON AGAIN**

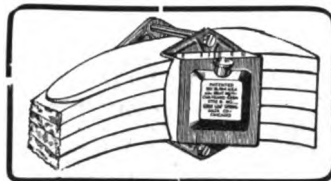
**OUT AGAIN**

**OFF AGAIN**

**Dealers—They will be the best little sellers you ever had.**

**GRUS LEAF SPRING OILER CO.**  
1536 Michigan Ave. Chicago

## No Motorist Can Afford to Over-Look This Tremendous Necessity!



The Grus Leaf Spring Oiler saves 20 times its value in wear and tear on engine parts. It can be attached in a jiffy to any spring and gives each leaf of the spring the RIGHT lubrication.



BACKED BY A  
SUBSTANTIAL GUARANTEE

**GRUS LEAF SPRING  
OILER COMPANY**  
1536 Michigan Avenue  
CHICAGO

**DEALERS** The Grus Leaf Spring Oiler will be in heavy demand during 1917. You will find it a source of good will as well as profits. Write today for our dealers' proposition and guarantee.



## The Successful Garage Manager

is the one who lets the people know he is seeking their trade—that he is in business to serve them. The same is true in any business. Wherever you see a

## Federal Electric Sign

installed, you will not see any one loafing.

You should realize that many autoists who need garage facilities would stop at your place if there was an electric sign to tell them where you are.

Let us help you plan a Federal Electric Sign for your garage. Address Dept. S.

**Commonwealth Edison Company**

Edison Building  
72 West Adams Street, Chicago

If located outside Chicago address: Federal Sign System (Electric),  
Lake and Desplaines Streets, Chicago

742



## EVER TIGHT

BEWARE OF IMITATIONS

The right-angle interlock is your safeguard

## PISTON RINGS

This perfect three-piece construction justifies the name—EVER-TIGHT. Note now accurately the right angles fit together. Engineers and Engine Builders acknowledge that this is the only proper construction for safety and prevention of leakage.

**Get Your Share of EVER-TIGHT Profits**

Make money for yourself and save money for your customers by installing Ever-Tight Piston Rings in their cars. That puts you "in solid" with your trade and gives your bank account a boost at the same time. Ever-Tight Piston Rings absolutely prevent leakage. They are guaranteed to give compression in out-of-round cylinders as well as in true ones. They produce more power—thus reducing maintenance cost. Ever-Tight Piston Rings consist of three separate parts grooved together into one ring by its own right angle interlock. They fit tight, without binding. They are flexible, and friction is reduced to the minimum. The Ever-Tight is the only perfect three-piece piston ring on the market. It is the leader.

It's up to you to investigate Ever-Tight Piston Rings for your own sake as well as your customers'. If dealers do not carry Ever-Tight Piston Rings, write us direct.

**Ever-Tight Piston Ring Co.**  
1431 Chestnut St. St. Louis, Mo.





CARL H. FAST

## Director of Accounting and Cost-Finding Appointed *An Announcement*

**M**R CARL H. FAST has been appointed Director of Accounting and Cost-Finding of the A. A. G. O., and will counsel with members of the Association with a view to installing for them a simplified accounting and cost-finding system, to be used in connection with the Graficount or bookless bookkeeping, stocks and profit-indicating system. His services will be free. The Graficount system is a part of the educational equipment of the A. A. G. O., and it is supplied to the retail auto and garage trade exclusively through this Association. By the use of this system a business can be so guided and the accounts so handled as to enable the proprietor to place it and keep it on a profit basis if such a thing is possible, with a minimum of detail labor and without any knowledge of ordinary bookkeeping and its intricacies. Write to Mr. Fast, care of this office, for further information.

### Items of Interest.

Ford dealers in Philadelphia are uniting in an advertising campaign. Dealers in other cities are also adopting the plan.

The sixth annual Northern Iowa Automobile Show will be held in the new Terminal Warehouse, Ft. Dodge, Ia., March 6 to 10.

The Gate City Automobile Show will be held at Fargo, N. D., March 13 to 16. S. L. Sheeron, of the Northwestern Supply Company, is secretary of the enterprise.

The twelfth annual Omaha Automobile Show will be held February 26 to March 3. Clarke G. Powell is the manager and writes that this year will make a new record.

The Peoria (Ill.) Auto Dealers' Association will hold a show February 14 to 17 and a program is in course of preparation. Rollin Travis is a member of this committee.

The Toledo Auto Dealers' Association issues a monthly bulletin in the interest of the craft of that city. The last issue announces the Toledo Auto Show date, which is February 12 to 17.

The Franklin Automobile Company, Syracuse, N. Y., has increased the prices of all models \$100 each, to take effect March 1. The Auburn Automobile Company, Auburn, Ind., has increased its five-passenger light six \$60, effective January 1.

A. L. Randall has been, for the third time, elected president of the Ft. Wayne Automobile Trade Association, Ft. Wayne, Ind. The other officers are: Vice-president, George Fox; secretary, Lewis Ohnhaus; treasurer, Chester Schiefer. This association is doing effective work.

M. O. Wilkins issues the Automobile Record in the interests of the Oregon motor car trade. It is full of solid information and boosts the work of the Dealers'

Motor Car Association of Oregon, of which Mr. Wilkins is president and manager. C. M. Mengies is secretary-treasurer.

The C. A. Shaler Company, Waupun, Wis., has purchased the business of the Five-Minute Vulcanizer Company, Kansas City, and the Vulcan Manufacturing Company, Denver. A popular priced Shaler model, embodying principles embraced in recently acquired patents, will soon be placed on the market.

"The whole trouble is we have been stung so often and think the national movement will not stay on the job," writes a York, Pa., auto dealer and garageman. The difficulty in the past has been that inexperienced association men have piloted the national organization boat. Not so with the A. A. G. O. and it *will* stay on the job because it is succeeding.

Recent advances in motor car prices have been announced as follows: Buick, D-4-34, from \$650 to \$660; D-4-35, from \$665 to \$675; D-6-44, from \$985 to \$1,040; D-6-45, from \$1,020 to \$1,070; D-6-46, from 1,425 to \$1,440, and D-6-47 from \$1,800 to \$1,835. Maxwell, touring car, from \$595 to \$635, and roadster from \$580 to \$620. The Standard Eight, seven-passenger touring car from \$1,800 to \$1,900, and the four-passenger roadster from \$1,750 to \$1,850. The King, from \$1,400 to \$1,585 for the seven and four-passenger touring car and three-passenger roadster, and the seven-passenger Sedan to \$2,150.

### Want Standard for Gasoline

"In its attempt at establishing a standard for gasoline, the Federal Bureau of Mines will find ready co-operation from many sources," says Chief Chemist Huff of the Packard Motor Car Company.

"It must appear to refiners, to manufacturers of automobiles, and to motorists

generally as quite desirable that a high standard be set up and approved by the government.

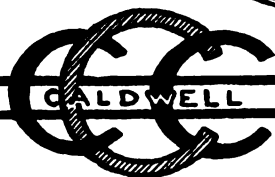
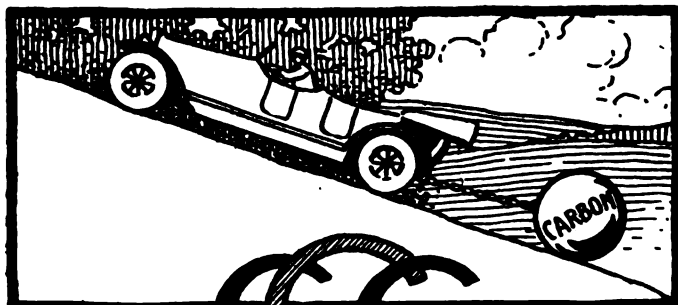
"There is being marketed generally nowadays a fuel of low gravity. It is by no means as satisfactory as the gasoline we were furnished five or six years ago, before the tremendous demand of the present day was felt. A continually increasing percentage of this fuel fails to vaporize at motor temperature—about 225 degrees.

"I should like to see the federal government establish a higher standard than the gasoline now in use. Instead of a classification including several qualities, the standard finally adopted should be an approval, I think, of only one grade. It might well be designated motor gasoline. A complicated classification would confuse motorists and cover deceitful practices. I should set the standard at 95 per cent, meaning that in a vaporizing test 95 per cent of the fluid sold as 'U. S. Approved Motor Gasoline' would distill pure gasoline at 180 degrees centigrade.

### Standardizing Prices at Columbus, Ohio.

The garages and service stations of Columbus, O., acting through the Columbus Automobile Trade Association, have started a movement to standardize prices for all work and service, including grinding of valves, removing carbon, adjusting clutches, oiling and greasing, repairing tubes and tires, etc. A special committee has been appointed consisting of Roy Williams, Ralph Atkinson and Frank Jolly. Another committee consisting of W. E. Evans, A. M. Fayr and John G. Gilmore was appointed to devise a suitable schedule of prices for charging and repairing batteries.





## Triple "C" Carbon Cleaner Takes the Ball and Chain Off the Car

Triple "C" Carbon Cleaner is known for its thoroughness in action—its positive cleaning power and its freedom from ingredients injurious to the motor. That's why motorists who once use Triple "C" always demand it.

Dealers handle Triple "C" because they can depend upon it satisfying their best customers, and because it allows them a fair profit and builds up a trade for them.

If you do not already carry Triple "C" Carbon Cleaner, write us today for interesting particulars.

½ Pints      Pints      Quarts      Gallons

**CAR-GAS COMPANY**  
210 Fourth Avenue      PITTSBURGH, PA.

### Garage Signs

To the garage a Flexlume sign is a necessity—a business-pulling investment. Its raised white letters standing out from a dark background make not only a bright, distinctive night display, but an attention-pulling day sign. A few dollars will bring a Flexlume garage sign to you, cash or easy payments.

*Write for sketch and full information.*

**FLEXLUME SIGN CO.**  
1450 Niagara St.,      BUFFALO, N. Y.  
St. Catharines, Ontario  
Electrical Products Corporation, - Los Angeles, Cal.

## Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

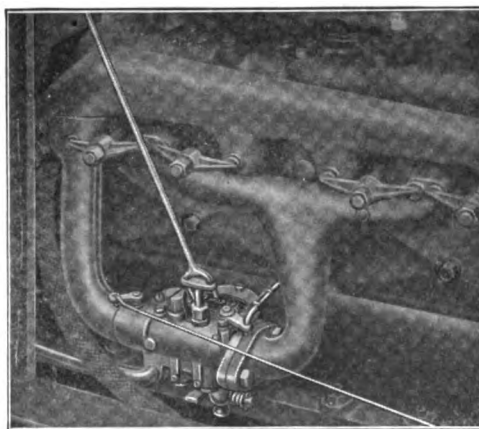
Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.  
Main Office, Leavitt St. and Jackson Blvd.

**Pondelick Brothers,** CHICAGO ILLINOIS

## Model N Marvel Carburetor

Designed especially for Ford Cars.  
Fits right in place of regular installation, no changes whatsoever.



Model E Marvel Carburetors are standard on Buick, Olds, and Oakland

Model E Marvel Carburetors greatly improve Overland and Studebaker cars. Catalog on application.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retail for \$8.00 complete.

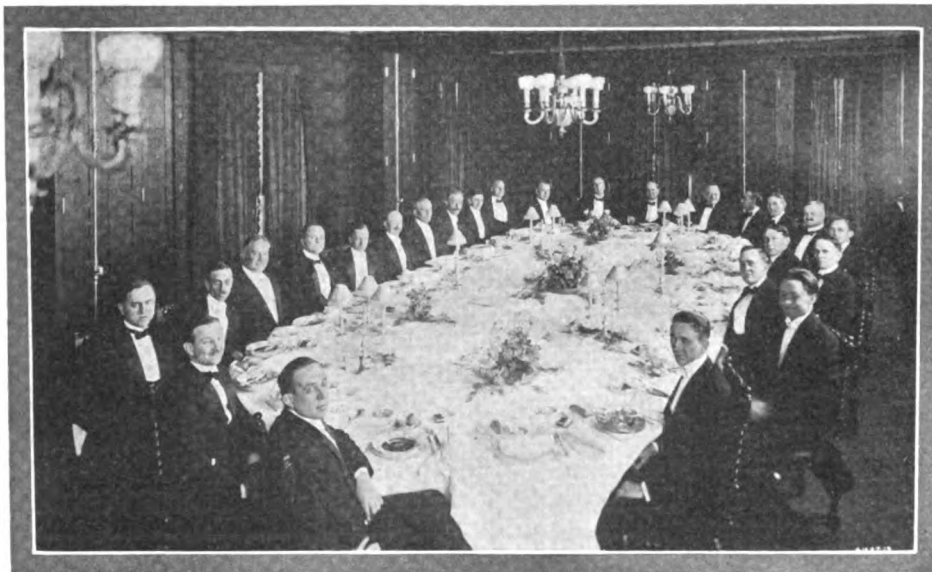
**MARVEL CARBURETOR COMPANY**  
FLINT, MICHIGAN, U. S. A.

# Form-a-Truck Dinner

## Close of Remarkably Successful Year for Smith Form-a-Truck Co.

One would have to look long and far to find a more satisfied or successful gathering than the twenty-seven members of the sales and executive forces of the Smith Motor Truck Corporation who were the guests of President A. D. Smith and General Manager E. I. Rosenfeld, Tuesday night, December 26th, at the banquet

C. M. Strieby, Advertising Manager.  
A. Lee Henson, Supervisor.  
Edwin A. Munger, Counsel.  
Sales Managers: Eugene H. Elliott, Eastern; M. D. McNab, Branch Houses; Albert S. Johnston, Western.  
District Representatives: Walter F. Gordon, J. Frank Fernihough, W. V.



Dinner of Form-a-Truckers.

given them at the Blackstone Hotel, Chicago, which terminated a three days' convention.

And justly so too, when one realizes that from August, 1915, to December, 1916, this company has been able to make and market over 10,000 Smith Form-A-Trucks which have been delivered to every quarter of the globe. Further, to know that this task was eclipsed by being able to re-finance so that they have now one of the biggest motor truck organizations in the industry, in addition to building a most successful organization as quickly as was necessary and still not rob the word success of any part of its meaning.

During the evening, talks were given by a number of the executives on the past, present and future of the company, and both Mr. Smith and Mr. Rosenfeld were warmly congratulated many times on what they have accomplished.

Those present were:

Albert D. Smith, President.  
Edward I. Rosenfeld, V. P. & Gen. Mgr.  
Byron E. Veatch, Treasurer.  
Frank S. Lyndall, Auditor.  
Frank M. Taylor, Purchasing Agent.  
Macy, L. A. Woodward, Harry B. Allen,

Frank L. Mead, Henry E. Simon, Ralph F. Schneider, W. Rex Thompson, Arthur Lyndall.

Louis M. Henoeh, Treasurer, A. M. Castle & Co.; Berry Rockwell, Vice-Pres., Macavoy Advertising Co.; Arthur W. Moore, Chicago Mgr., Firestone Tire Co.; E. B. Bowling, Salesman, Firestone Tire Co.; J. Mitchell Hoyt, Vice-Pres., Commerce Trust Co.; Chas. B. Little, Vice-Pres., Commerce Trust Co.

Mr. Auto Dealer, you can't afford to miss the Chicago Auto Show and A. A. G. O. Convention, in Chicago, week of Jan. 27-Feb. 3.

### Novel Motorcycle Road Contest.

In a recent novel road contest held in New Jersey, thirty-two motorcyclists completed a run of 204 miles on a twenty-two mile an hour schedule. Eleven of the finishers rode machines equipped with Goodyear Blue Streak Tires, and attributed their success largely to the absence of tire trouble.

Mr. Garageman, you can't afford to miss the Chicago Auto Show and A. A. G. O. Convention, in Chicago, week of Jan. 27-Feb. 3.

### Flexlume Signs.

A matter which is really of the utmost importance, but one which is often overlooked by the owner of a public garage is the selection of a suitable sign. In order to have a maximum of efficiency the garage sign must not only be attention-pulling but it must possess distinctiveness. In other words it is not the brilliancy of the electrical display alone which attracts the motorist in need of repairs or a place to leave his car, but the way this display is obtained counts fully as much.

After a careful analysis of the various elements which enter into the usefulness of the electric sign the Flexlume Sign Co., Buffalo, N. Y., has placed upon the market a standardized garage sign which comes very near to being the ideal thing for the owner of a public garage, and yet by reason of quantity production, it is sold at a remarkably low price. It is a brightly illuminated electric sign with raised white letters standing out from a dark background. This sign is fully as bright as the best of the common exposed lamp signs and in addition has the advantage of smoothness of outline due to the fact that each letter is one piece of raised white glass, and the fact that one light in the sign out of order does not spoil its effectiveness. Moreover, the manufacturers claim that by reason of its construction the Flexlume sign effects a saving of fully eighty per cent. in the cost of lamps.

But the best argument in favor of the Flexlume garage sign is that it is a day-light sign as well as a night sign. Its raised white letters, standing out from a dark background, are almost as attractive in the day time as when the lights are switched on at night. It is a sign you cannot miss.

Full information concerning these signs and terms of sale will be furnished by the manufacturers upon request.

### Berg Cotterpin Puller.

G. A. Berg & Co. are finding a ready market for the Berg Cotterpin Puller. It is guaranteed to pull out any pin inside of clutches, motor bearings or any part of the car, no matter how inaccessible and to release the pin in condition to use again.



The Cotterpin Puller is made of Swedish alloy carbon steel and is retailed in black finish at \$1.00; nickel plated at \$1.25. Wales-Adamson Company, 1402 Michigan Ave., Chicago, are the factory representatives.

### Plath Goes with Harroun.

John J. Plath has been appointed sales director of the Harroun Motor Corporation, Wayne, Mich. Mr. Plath resigned from the Maxwell Motor Company to accept his new position.

## THE NAME SPACKE ON AIR COMPRESSORS INSURES SERVICE-QUALITY-ECONOMY

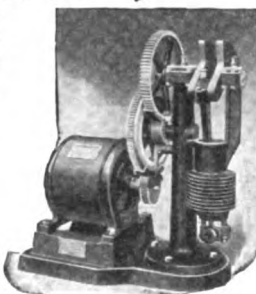
In the construction of Spacke Air Compressors the first thought is—quality—rigidity—endurance. It is possible to build cheaper air compressors than the Spacke, but if it were possible to build a BETTER air compressor—it, too, would be a SPACKE.

Install a SPACKE and end your air compressor troubles.

### THE F. W. SPACKE MACHINE COMPANY

WRITE US  
TODAY FOR  
PARTICULARS

Indianapolis, Ind.



## The WILLARD SUPER-HEATER

## Seven Miles More to a Gallon of Gas

That's what the Willard Super-Heater will give on a Ford. Intensely practical—can be attached in ten minutes. Outlast an automobile.

Through the introduction of superheated air into the standard Ford carburetor, by the WILLARD SUPER-HEATER, the gasoline is completely vaporized, securing the full efficiency from the gas and requiring less amount per charge; consequently more mileage per gallon.

### Good in Any Weather Indispensable in Cold Weather

**DEALERS:**—The high price of gasoline makes the Willard Super-Heater a necessity. Every Ford owner is interested—every Ford owner a live prospect.

Ask our Sales Department about our Agency proposition for open territory.

**Retail Price \$5.00**

**Willard Company**  
South Bend Indiana



## Standardize Your Repair Charges

## The Cosmo Time Stamp Thousands in Use



Price \$7.00

Is proving its value in Garages all over the country. GIVES you exact DAY, HOUR and MINUTE each and every repair job is started and finished.

Base your charges on exact time consumed and you can't help but make money in your repair department.

STOPS arguments with your customers.

MAIL the COUPON, or write for one on 10 days' trial. No obligation to purchase. Guaranteed—Accurate—Durable.

**Our Free Trial Offer to Garages and Repair Shops**

**A. D. JOSLIN MFG. CO.,**  
225 W. Erie St., Chicago, Ill.

Please send me COSMO TIME STAMP on 10 days' trial. At the end of 10 days I will either return the Time Stamp or remit you the price, \$7.00.

Name .....

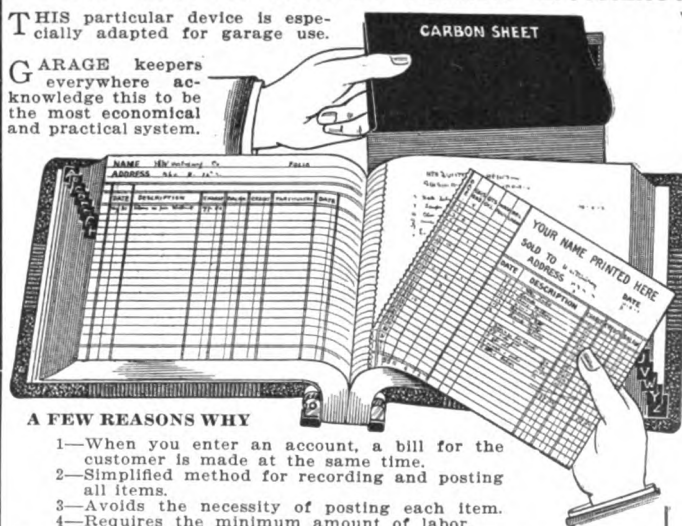
Address .....

# SAVE TIME AND MONEY

## Our SPECIAL GARAGE Bookkeeping Plan Gives You the HIGHEST Possible EFFICIENCY

THIS particular device is especially adapted for garage use.

GARAGE keepers everywhere acknowledge this to be the most economical and practical system.



### A FEW REASONS WHY

- 1—When you enter an account, a bill for the customer is made at the same time.
- 2—Simplified method for recording and posting all items.
- 3—Avoids the necessity of posting each item.
- 4—Requires the minimum amount of labor.

This page is the customer's bill; the one underneath is your copy.

*Harton's Garage and Accounting Record is another new labor saving device we make. Ask about it.*

SEND FOR DESCRIPTIVE FOLDER AND FULL PARTICULARS

**THOMAS J. HARTON & CO., Inc.,** 212x Church St. NEW YORK  
Loose Leaf Specialties

### K. C. G. Non-Slip Step.

The K-C-G Non-Slip Step has its Chicago home with Gray-Heath Company, 1440 South Michigan avenue.

The step itself is a modern version applied to an automobile, of the old-fashioned scraper and door mat. In addition, it is the covering of salt or cinders applied to the front steps by the careful housewife.

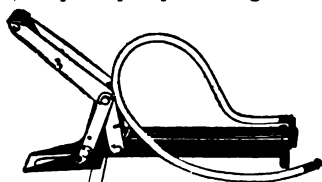
Altogether, the K-C-G Non-Slip Step is the width of a running-board and is the one means of guaranteeing that no mud or snow is carried into the automobile. With all its utility, it adds decidedly to the appearance of a car, the metal parts being enameled and the rubber easily being kept clean and sightly. One uses the step as naturally as a door mat before stepping into a house. Also, one must step on the rubber in entering or leaving the car, thus saving many a fall caused by stepping on the metal of a cold running-board.

The Non-Slip Step can be put on with a screw-driver in a few minutes. It has been found in practice that it is one of the few accessories that sell on sight, a majority of car owners buying from one to four. Particulars will be sent on request to the Gray-Heath Company.

### Twombly Foot Pump.

Abbott Motor Equipment Company, Broadway and 59th street, New York City, are marketing the Twombly Tire Foot Pump, warranted to take that tired feeling out of the tire pumping operation.

Here it is, open and closed. Connect with the tire, drop the pump on the ground, press



the foot on the pedal and smile sweetly, especially if you are a woman, on any victim caught in the back-breaking task of pumping by hand.



The Twombly Foot Pump has a compound leverage on the order of the far-famed toggle-joint of the Washington hand press and that is sufficient indication of power to anyone who ever has smelled printer's ink. The pump fits into the tool box easily and is pronounced a seller at sight. The retail price is \$4.50.

### New "M. & E." Grease Cup.

One of the standard, well known and widely used grease cups on the market is the "M. & E." Ratchet Top cup which has an interior coil spring, engaging in radial corrugations of the top or cap. It is claimed to be short, simple, clean and very efficient.

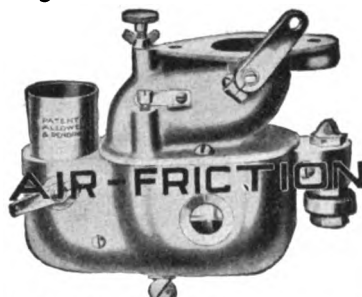
The new "M. & E." Ratchet Top Grease

cup, with special finish, is claimed to possess rust resisting qualities to a much greater extent than the ordinary plain or rough steel cup and this finish approaches nickel plating in brightness and lustre and without any coating to peel. It is said that a slight occasional rubbing with an oily rag should help to retain the lustre; and, as there is no additional charge for this new Special Finish cup, the manufacturers announce that it is interesting former users of nickel plated and polished brass cups.

Merchant & Evans Company is now rounding out its fiftieth anniversary and are well known in the automobile world as manufacturers of the "Hele-Shaw" clutch, "Evans" Alignment joints and "Evans" Universal joints.

### Air Friction Carbureter.

The Air Friction Carbureter Company, Dayton, Ohio, bases its success on first realizing the change in quality in gasoline. The carbureter of yesterday had the comparatively simple task of handling a high-grade, volatile fuel. While successful with such fuel, the carbureter of yesterday fails on the fuel of today. The Air Friction Company abandoned the old method of construction and planned a carbureter which delivers to the cylinders a powerful gas from the lower grades of fuel. Incidentally, this materially decreases the cost of operating a motor.



This is accomplished by means of the air-friction device; in brief, a stream of air at right angles to instead of parallel with the fuel flow. Special construction of the carbureter further helps in the consequent atomizing of the fuel and allows for an increase or decrease, depending on the need. No matter how low grade a fuel is used and how closely the particles consequently tend to adhere to each other, the air friction and carbureter construction succeed in atomizing them.

The Air Friction Company guarantee, with their hot air and dash adjustment, to save money in operating a motor no matter what the grade of the gasoline or whether it is half gasoline and half kerosene or all distillate.

### Speedy Spring Service.

The Tuthill Spring Company of Chicago has increased its production to a marked degree by the use of some new and unique fitting machines, which are said to give a more perfect "fit" of one leaf upon the other than has been possible heretofore.

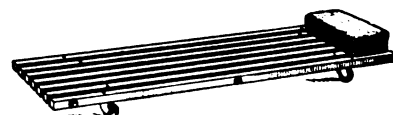
It is essential to proper spring action that the stresses be properly distributed to each leaf, and such distribution is only possible with exact fitting.

In order to give the quickest possible service to the motorist in need of a new spring to replace a broken one, a new stock room has been constructed in which will be kept on hand the most complete stock of automobile springs in the world. Springs for practically every make of car that is sold in large quantities will be kept on hand, ready to be rushed out by express immediately upon receipt of an order. Distributors in nearly all cities of importance throughout the United States also carry a complete stock of Tuthill Titanic Springs.

A schedule or production control board is now being devised along the lines of the Taylor System of Scientific Management, by which all special orders are scheduled through the factory just as trains are scheduled over a railroad. Any special order for an automobile spring can be "expressed" through the factory on a forty-eight-hour schedule and it is hoped that this time may eventually be reduced as the "grades" in the system are eliminated.

### Gray-Heath Creeper.

Gray-Heath Co., 1440 Michigan avenue, Chicago, find their G-H Creeper has a field all its own. It is just wide enough to lie on comfortably and have plenty of elbow room. Also, it is low enough to slide under the lowest car.



The main feature of the G-H Creeper is its strength, although it is light. It is made of hardwood strips  $1\frac{1}{4} \times \frac{3}{4}$  inches. The strips are securely bolted together and the casters, as well as the head-rest, are screwed on. Not a nail is used in the construction. It is intended to last a garage owner a lifetime; under no circumstances to break down under a rush of work. It retails at \$1.50 and carries a good dealer's profit.

### Swindler Begins Sentence.

Thomas P. Keyes, of Chicago, convicted of swindling in connection with the sale of fraudulent automobile stocks and exposed in the November number of the AMERICAN GARAGE AND AUTO DEALER, commenced serving his sentence of from one to ten years in the Joliet penitentiary, January 18.

### One Way To Help.

Readers of this journal and members of the A. A. G. O. can help build up forces that are working to advance their material interests by supporting the advertisers found in these pages. Their support of an official publication is vital, and your support of their enterprises in return cements a co-operation that will prove a lasting benefit to the movement.





**Mr. Dealer**

## Here Is Your Business Opportunity to Cash In On Winter Business:

Instead of letting your customers store their Ford Roadsters or Touring Cars for the winter—which means loss of revenue to YOU—show them how they can get "full value" from their Fords, besides transforming them into cars of beauty, by equipping with MILLSPAUGH & IRISH Ford Coupes or Ford Sedans.

Our Ford bodies are all of standardized dimensions and can be fitted to any Ford chassis in an hour's time.

PROFITABLE DEALERS' OPPORTUNITIES

Write for Particulars.

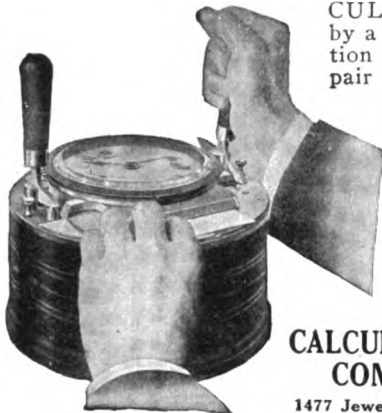
## Millspaugh & Irish

212 W. McCarty St., Indianapolis, Ind.

## CALCULAGRAPH YOUR REPAIR CHARGES AND PREVENT DISPUTES

Stamp all your repair and charge tickets with a CALCULAGRAPH, then if your customer complains, show him the CALCULAGRAPH ticket which contains a record of ELAPSED TIME (actual working time).

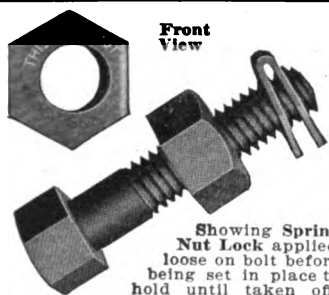
Satisfied customers will soon pay for the cost of a CALCULAGRAPH by a standardization of your repair charges.



Write for booklet illustrating a complete set of forms for a simple garage cost system.

**CALCULAGRAPH  
COMPANY**

1477 Jewelers Building  
New York City



Front View

## Why Not Be Sure

that every part of the engine; chassis, or body of the car you make will **stay together** until taken apart?

## Spring Nut Locks

are the simplest, surest, safest device to **positively lock** any nut on any bolt. Resists all vibrations. Cannot harm threads. Easily applied. Released whenever desired.

### Cheapest and Best

Manufacturers, Jobbers, Garage Men, Repair Men and all Dealers should write for prices on sizes now available. Orders filled in rotation. All sizes by January 1st.

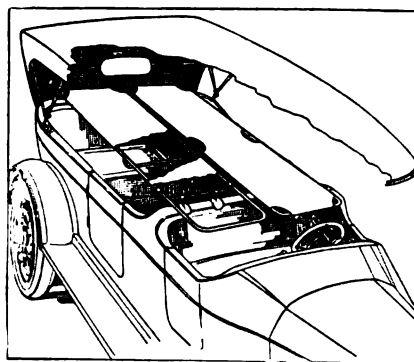
**Spring Nut Lock  
Company**

643 Transportation Bldg.  
Chicago



Rear View

## SLEEP COMFORTABLY AND CHEAP



Cut showing 2 Kots placed side by side.  
Each one is 6 ft. long by 2 ft. wide.

The "ANY-KAR" AUTO KOT will fit any 5 or 7 passenger car, adjusted in 1 minute to fit a Packard or Ford. Made of galvanized iron tubing, hinged in the middle and covered with 12 oz. ducking. When not in use can be folded and carried in the tonneau, out of the way. When in position the Kot lies perfectly level and is as comfortable as a bed. Weight 15 lbs.

### YOUR CUSTOMERS WILL WANT THIS

Every automobile owner who does any touring; every salesman who makes his territory in a car; campers, hunters, fishermen—any one who remains away from home over night with his automobile, can cut his traveling cost one-third and sleep comfortably in an "ANY-KAR."

Write today for full description and our proposition to dealers. One wanted in each town.

**PEORIA AUTO-KOT COMPANY**  
PEORIA                      Dept. 5                      ILLINOIS



### "H. & N." Carburetor Company Buys New Plant.

The natural development and increase in sales, due to the production of what they believe to be a complete and perfect line of automatic gasoline and kerosene carburetors, having a remarkable record for mileage, speed and power, and which have met all the requirements of the most discriminating and expert car owners and drivers, has forced the "H. & N." Company to join the rapidly increasing family of automobile and accessory manufacturers located in Long Island City.

Heretofore, this company operated a very complete plant in New York City, but as the demand for their goods constantly increased, they were compelled to have a great amount of their work done outside and assembled in their own shop, often resulting in exasperating delays and disappointments to their customers.

The purchase of this new and completely equipped plant, conveniently located at 138 West Avenue, Long Island City, close to the Queensboro Bridge, Steinway Tube and 34th Street Ferry, will give the "H. & N." Company the distinction of being the only standard carburetor factory in the city of New York.

The company will maintain and enlarge its service station located at 38 West 62nd street, near Broadway, in the very heart of the automobile section of that city.

While the "H. & N." carburetor has been well and favorably known in New York City for the past five years, among the highest class of owners, and thousands of them are in daily use on the better class of cars, it is only within the last year when the control of the company passed into very strong hands, that any effort has been made to extend the business. At present the company has its own branches in Boston, Philadelphia, Los Angeles, and Detroit; agencies and service stations in many of the leading cities throughout the country, and will soon start a national advertising campaign.

"The success of this company built on merit alone," said the general manager, "simply tends to prove that there is always room for a high-class article, backed by a satisfactory guarantee of performance or money really refunded, and the maintenance of a perfect organization of trained experts in their line."

### Kenyon with Republic Truck.

W. E. Kenyon, one of the pioneer boosters in the truck game, has become sales manager for the Chicago Republic Truck Co. W. E. has sold trucks all over the country and in Mexico and regards his present connection as one that will afford him the largest opportunities of his career.

### Calculagraph System.

Wherever a job is figured by the time spent on it, a Calculagraph is essential. There can be no dispute. A time-clock stamp at the beginning and end of the work leaves nothing to chance.

But this feature is only the foundation of the Calculagraph system. With the time clock is a series of card forms arranged in the simplest possible way to show actual costs. At the end of each job the garageman knows every moment of time

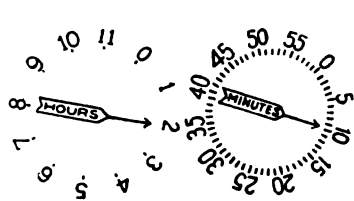
### Insurance Matters.

(Continued from page 26.)

dealer in America is the only thing necessary to make these seemingly unbelievable possibilities a reality.

These figures are sufficient evidence that the American Garage and Auto Dealers' Inter Insurance Exchange can be made one of the strongest, if not the strongest trade insurance organization in America.

Note.—Policy holders are asked to again

				P.M. P.M. JUN 1 1916 JUN 1 1916		EMPLOYE No. <b>12</b>
						R. D. No. <b>168</b>
<b>TIME ON JOB</b>				<b>STARTED</b>		<b>FINISHED</b>
Aale..... Body..... Brakes..... Building Upkeep..... Carburetor..... Cleaning Carbon..... Clutch..... Cooling System..... Delivering Cars.....	Demount'g-Instruct'g..... Dismant'g-As'mb'g..... Drive Shaft..... Electrical System..... Fenders..... Floor & Run. Boards..... Frame..... Gas and Air System..... Grinding Valves.....	Motor..... Oil & Grease..... Shifting Cars..... Ship. & Rec. Freight..... Speedometer..... Springs..... Steering Connections..... Tires.....	Towing Cars..... Transmission..... Truck Demount'g..... Universal Joint..... Upholstering & Top..... Wheels..... Windshield..... Wash & Polish.....		TIME <b>2.10</b>	
						ENTERED
						APPROVED
EMPLOYEE'S NAME						FORM 1040

Calculagraph Elapsed Time Card—Size 4 x 6 inches. Starting Time 2 p. m. Finishing Time 4:10 p. m.  
Elapsed Time 2 Hours 10 Minutes

and every piece of material used. He simply adds the overhead charge and profit and his bill is ready for presentation.

A decided advantage of the system is its simplicity. No bookkeeping knowledge is required and only enough figuring to get at the amount of the bill. The system is being marketed by Calculagraph Company, 1476 Jewelers Building, New York City. An illustrated booklet fully descriptive of the system will be sent on request.

The system is named from the Calculagraph clock-recording device. The workman takes out a daily payroll time card and which shows the exact times of his arrival in the morning, his departure and return at noon and his departure at night. This time-recording system applies to all work done in the repair shop. Consecutively numbered repair order cards are issued for the jobs, each card having a cost sheet on the back.

The workman takes a card, marks it with his own and the job numbers and checks the notation showing the kind of work. He then stamps the time on the Calculagraph and again stamps it when he finishes the job. A card showing the exact materials used also accompanies the work. Notations of time and material are noted on the cost sheet. The record is complete and amply fills the requirement that each job should be treated as if a dispute were likely.

read the above and thoroughly grasp the enormous profits in fire insurance. The loss ratio on all Chicago premiums last year, in a city where fire hazard is great, was 37.7 per cent. That means that on each \$100 received for insurance premiums last year in Chicago the companies only had to pay back \$37.70 to policy holders. That leaves a gross profit of \$62.30 on each \$100 received. Overhead charges should not exceed 25 per cent; but the companies had in addition \$37.30 profit on each \$100. That is the reason for the existence of our insurance efforts in behalf of garage owners and auto dealers.

As a member of the A. A. G. O., you are guaranteed a reduction of ten per cent in your premiums.

### Wonder Motor Truck Company.

The increase in business of pleasure cars of the Coey Motor Company of 2010 S. Wabash Ave., Chicago, has been such as to cause them to sell their truck business to a separate corporation, the Wonder Motor Truck Co., which has been organized with a capital of 250,000 shares. The output of the Wonder Truck Co., will be sold by distributors throughout the United States who are now being selected. The management will be about the same as the Coey Motor Company.

**MR. AUTO  
OWNER**  
SAVE TIME,  
TROUBLE and  
WORRY

By testing  
your Spark  
Plugs with the



## PERKINS SPARK PLUG TESTER

Locating any trouble instantly without removing the Spark Plugs. GET THE BEST RESULTS FROM YOUR SPARK PLUGS—SEE THAT THE GAPS ARE UNIFORM—LIKE THE GAP IN THE TESTER.  
Try the Tester—if the plug is O. K. a good fat spark will result, but broken porcelain or fouled plug will not show spark.  
Write today for sample for 75 cents. Send post-office or express order. A good seller and profitable proposition for dealers.

1777 Broadway

A. D. PERKINS

New York City



## GARAGE AIR TANKS

Scaife Copper-Brazed Tanks will hold air indefinitely without loss of pressure.

Copper-Brazed Tanks are made only by our company.

*Beware of Imitations!*

Wm. B. Scaife & Sons Co.  
26 Cortlandt St. NEW YORK, N. Y. Pittsburgh Pa.

## GASOLINE STORAGE OUTFITS

If you wish catalogue and prices of the cheapest, safe and thoroughly reliable gasoline storage system on the market, write us.

Wm. B. Scaife & Sons Co.  
New York Office: 26 Cortlandt St. Pittsburgh, Pa.

## *Jobs Await Skilled Mechanics in Detroit Factories*

- ☞ Come to Detroit—Five Dollar a Day Jobs waiting for skilled mechanics.
- ☞ We teach you the business in 100 hours—a new and practical system.
- ☞ Endorsed by all of the leading automobile factories.

*Terms to deserving applicants*      *Get particulars*

**Machinist Training School**  
140 East Fort St. :: DETROIT, MICH.

## Save Money—Save Clothes

Save  
Time



Save  
Temper

## Make Punctures Impossible With

# TIREOID

*"It Seals Punctures"*

NO matter how bad the weather—how you are dressed—how urgent your business—if you have a puncture you've got to fix it at once. You can forget punctures if you have Tireoid in your tires.

Tireoid seals up any puncture without loss of air. Here is guarantee: If, within six months after your tires have been treated with Tireoid, you have a puncture not exceeding in size that made by a 30-penny nail, you will receive your money back in full.

### We Have Agents Everywhere

Let one of them demonstrate Tireoid and explain the terms of our guarantee. Price \$10 for set of 3 or 3½ inch tires; \$13 for 4 or 4½ inch tires; \$16 for 5 or 5½ inch tires.

**THE TIREOID CO., 1200 Michigan Ave., Chicago**

# Commercial Truckmobile On Sale

## Description and Photographs of New Car. Made by Chicago Company

One of the most attractive, because simplest, of the truck units on the market for converting Ford cars into a truck is the Truckmobile, manufactured by the Commercial Truckmobile, with general offices at 1606 Michigan Avenue, Chicago.

The Truckmobile has several features that commend it very highly both to dealer and user. It has a longer wheel base (133 inches) than most of the others; also a wider frame (41½ inches) than others. These two features, it is claimed by the manufacturer, make for greater loading space, easier riding and steering qualities, as well as less side sway of load.

The manufacturers of the Truckmobile lay a great deal of stress on the placement and suspension of the side springs on the Truckmobile, for the springs are not suspended from the side of the frame as in other units, but directly from the under side of the frame. The Truckmobile man-

ufacturers claim that in carrying a load or weight the carrying power should be immediately below the load and not to one side of it. In method of interposing its side springs between frame and rear axle the Truckmobile is unique. This practice gives easier riding quality and reduces side sway.

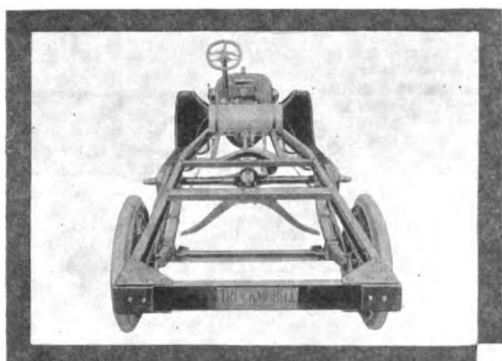
In its method of using the Ford rear axle as a jackshaft the Truckmobile is also unique. It not only does not mutilate or destroy the Ford axle in any way, but permits the use of a specially designed Bell sprocket different from anything used in Truck unit practice today. This sprocket keys right onto the jackshaft the same as any rear Ford wheel keys onto its axle and can be attached in a few moments. Naturally the Truckmobile method of using the Ford rear axle as a jackshaft does not require taking down of the rear housing or cutting of the rear axle itself. Therefore it permits of re-converting the Ford

back into a pleasure car if desired by the owner. It sells for \$350.00.

While the Truckmobile is rated as a ton truck it is easily capable of carrying a fifty per cent overload. The company manufacturing the Truckmobile is headed by E. F. Kirchberger, an active and aggressive Chicagoan. It is forging ahead in a way that is attracting attention and will turn out from four to five thousand units this year.

The Commercial Truckmobile Company is closing up dealer agencies every day, and is fortunate in being in a position to make immediate shipments.

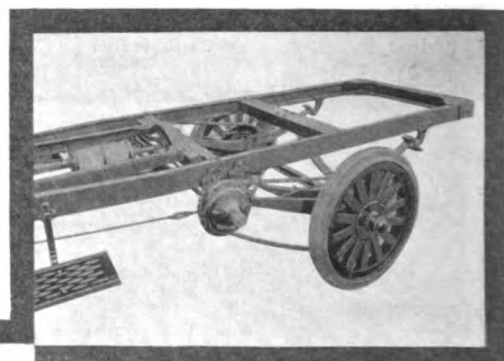
The manufacturers are holding a special exhibit in their general sales rooms at 1606 Michigan Avenue, just a half block south of the Michigan Avenue entrance to the armory, and are daily showing the Truckmobile to a great number of dealers and users.



(2)

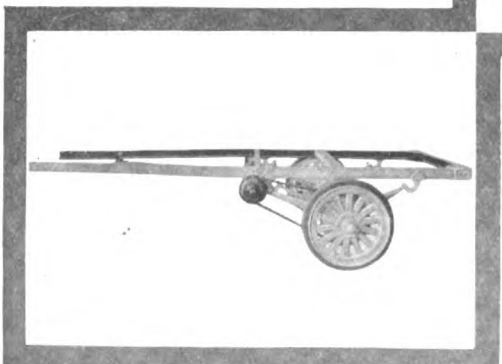
This illustration shows rear of Truckmobile unit when attached to Ford chassis. Note massive frame construction and reinforcement of frame above, below and at ends. This also shows how side springs are interposed between frame and axle.

COMMERCIAL  
TRUCKMOBILE  
UNIT.



(3)

Close-up of Truckmobile showing spring suspension (from lower side of frame) and special Truckmobile sprocket that keys on to the jack shaft, without cutting or mutilating Ford axle or housing in any way.



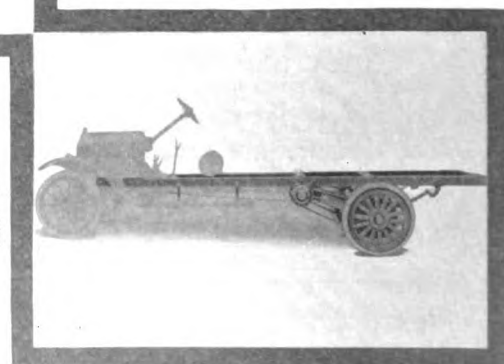
(4)

This Truckmobile unit before attaching to Ford chassis is 166 inches long. Its stability and simplicity of construction are brought out plainly.



(1)

The Truckmobile because of its extra long wheel base (133 inches) makes a roomy, massive one-ton truck capable of easily carrying a ton and a half.



(5)

This illustration shows the Truckmobile unit attached to Ford chassis making a dependable one-ton truck chassis. Complete connection can be made in a few hours by two men.

**TRADE MARK**  
**E-E-Z**  
**SEE EASY**

## CELLULOID CLEANSER

**REMOVES DIRT, SCRATCHES AND DISCOLORATIONS FROM AUTOMOBILE CURTAIN WINDOWS AND PRESERVES THE CELLULOID**

*Alone in its field*

C-E-Z Celluloid Cleanser is the **only satisfactory** preparation of its kind and for its purpose. All other substances either dissolve, scratch, abrade or discolor the celluloid.

C-E-Z Celluloid Cleanser re-polishes the surface—prevents cracking, frosting and ageing of the celluloid—extends its life and usefulness.

C-E-Z Celluloid Cleanser is endorsed by automobile manufacturers; dealers, supply, garage and repair men; auto-top makers and car owners.

**SOLVES ALL CELLULOID WINDOW PROBLEMS**


C-E-Z is put up in attractive, 3-colored, screw-cap, double-ended cans.

**PRICE, 50c**

Every car owner a sure customer.

**Descriptive Literature Sent Free On Request.**

**Write Today**



C-E-Z is packed one dozen in a handsome "attention-getter" display carton.

**Attractive Proposition to the Trade**

**Sold Thru Dealers Only.**

Celluloid Cleanser Co.  
Dept. A, Tower Bldg.  
CHICAGO, U. S. A.



## Adams Auto Top Holder

**"STOPS THE RATTLE—SAVES YOUR TOP"**

**NEATEST—QUICKEST—STRONGEST**



Dealers everywhere will find a ready sale for this best of all Top Holders. **An ornament to any car.** No unsightly projecting arms, nor dangling straps. Can be installed in two minutes, and operates quicker than any other.

Two sizes —  $\frac{5}{8}$ " holes for small cars.  $\frac{3}{4}$ " for large ones.

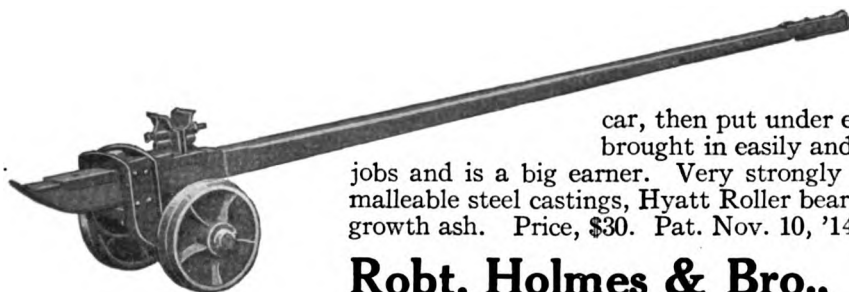
**Price \$2.00 per pair**

*Write for Discounts to Dealers*

## ROCK ISLAND MFG. CO.

Department C ROCK ISLAND, ILL.

## Hundreds of Garagemen Use the Holmes Wrecking Truck



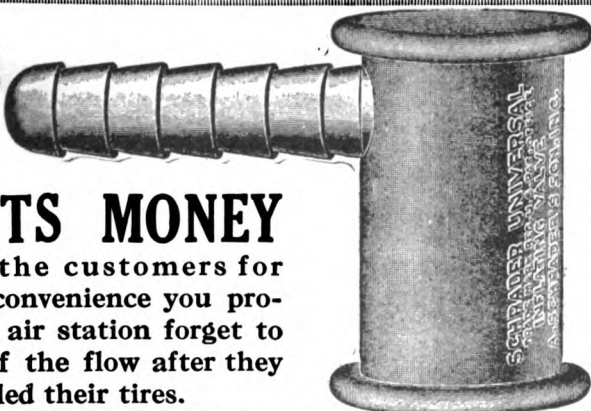
It is just what they need for bringing in wrecked cars. The truck is used as lever to raise the car, then put under either axle and any size car can be brought in easily and quickly. Brings lots of profitable jobs and is a big earner. Very strongly made, having frame and wheels of malleable steel castings, Hyatt Roller bearings for wheels, and tongue of second growth ash. Price, \$30. Pat. Nov. 10, '14. Discounts to dealers and garages.

**Robt. Holmes & Bro., - Danville, Ill.**

**FREE  
AIR**

**COSTS MONEY**

when the customers for whose convenience you provide an air station forget to turn off the flow after they have filled their tires.



Guard against this waste by attaching a  
**Schrader Automatic Inflating Valve**  
to your air hose.

Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve. Made to fit any diameter of hose from 1-4 in. to 5-8 in.

**PRICE ONE DOLLAR**

*Manufactured by*

**A. SCHRADER'S SON, Inc.**

783-793 Atlantic Ave., Brooklyn, N. Y.

*Schrader products were awarded a Grand Prize and two Gold Medals at the Panama-Pacific International Exposition. "There's a reason."*

# Doings in The Garage and Auto Trade

## Eastern States.

Wellesly Realty Co., New York City, are building a six-story \$60,000 garage at 256-8 W. 36th St.

Francis Donegan, South Bethlehem, Penn., is completing a new 40x140 ft. garage and accessory room.

Cleveland R. Bealmear, Baltimore, Md., is putting up a three-story 66x200, \$110,000 garage on N. Charles St.

Wilmer D. Relyes, Hackensack, N. J., is another who has abandoned his livery business for a garage. A. Linkroom is his partner.

H. M. Salyer, Newark, N. J., is building a new \$35,000 garage at Washington and Pearl Streets.

William Lueddeke, Newark, N. J., will occupy the new garage at 99 Monroe St. He will carry accessories.

Elgin Realty Co., Newark, N. J., has rented for term of years, a 100-car garage on South Orange, near Twelfth St., from David Seidman.

Willis D. Sweet, Binghamton, N. Y., finds his Knickerbocker block location is becoming too small for his business and has leased the model garage now under construction by G. A. Gertmenian. There will be a clear, circular drive in and out of the garage.

Mr. Auto Dealer, you can't afford to miss the Chicago Auto Show and A. A. G. O. Convention, in Chicago, week of Jan. 27-Feb. 3.

## Middle States.

Zortman & Beckman, Lowell, Indiana, have opened their new 70x120 ft. garage.

Princeton Auto Co., Princeton, Ind., Wm. Weese, manager, is completing a fine garage and repair shop.

George Cronkwright, Adel, Iowa, has bought the repair shop of G. W. Moore.

H. Frick, Michigan City, Ind., has bought the garage and accessory stock of G. O. Reed.

T. H. White, Sullivan, Illinois, succeeds his father in the ownership of the James White garage and repair shop.

White Bros., Havana, Ill., are completing their 60x132 ft. brick and concrete garage.

August Michael, Lorain, Ohio, has opened a new garage and will specialize in accessories.

Walter Craeger, Butler, Ind., has bought the Lincoln garage of Walter Strawn.

John Yeakey, Allegan, Mich., has bought out the garage business of Daniel Requa.

Wm. H. Kay, Leland, Ill., is putting up a 29x60 addition to his garage, giving display room for his accessory line.

S. S. Thompson, Milwaukee, Wis., is building a \$3,000 addition to his garage at 400 Farwell St.

Ed. Therien, St. Anne, Ill., has established himself here in the garage business.

F. M. Buskirk, Colfax, Ind., has bought the George Lane garage.

James Miller, Edinburg, Ill., has opened a new garage in the Wacker building.

Sam Applegate, Greensburg, Ind., is converting his livery stable into a garage and auto repair shop.

Fay L. Cusick, West Allis, Wis., is preparing to open a new \$30,000 garage, with service station and accessory line.

Charles Bankson, Coletown, Ohio, has opened a new garage, with repair shop and accessories.

Lee Hartwick, Huntingburg, Ind., has bought the interest of Lee Heth in a local

garage. Repair work will be done and accessories carried.

Weber & Gale, Ft. Wayne, Ind., are building a new \$35,000, 100x150 ft. garage at 313-321 E. Washington Street. Accessories will be kept.

E. A. Talbert, Morristown, Ind., is building a 32x65 ft. addition for his repair shop and show room.

John Fischenich, Madison, Wis., is building a new garage at University Ave. and Allen St. It will be 54x100 ft. and cost \$7,000.

Dr. D. E. Seller, Manistique, Mich., is putting up a 50x100 ft. garage in connection with his Ford agency. Repair work and accessories.

C. N. Priest, Jacksonville, Ill., is putting up an 80x170 ft. garage building.

Norway Garage, Norway, Mich., Richard Simon, proprietor, has been forced to begin the erection of a large addition.

Herrick & Goodrich, Holly, Mich., are the new proprietors of the Holly Garage, buying out J. R. Inskeep.

Adam Rumsyre, Columbia City, Ind., has found his sole ownership of the Auto Inn Garage too onerous and has sold a half interest to Clarence Paige.

Carlson & Vorhies, Lockridge, Iowa, have bought and are now operating the Lockridge Garage.

Axel Meler, Nekoosa, Wis., has leased a large brick building and has opened a garage and repair shop, in connection with a line of accessories.

Miller & Brennan, Anderson, Ind., have bought the Central garage from George A. Lanpheer.

A. Kelly, Lancaster, Ohio, has opened a garage and repair shop. He will carry accessories.

C. W. Rutler, Millersburg, Ind., has bought the Benton garage of Willard Price.

Pinkerton Motor Co., Peoria, Ill., are building a \$24,000 fire proof garage on Main St.

Walter Creager, Butler, Ind., has bought the Lincoln garage and building of Walter Strawn.

Toonen-Barlement-Wright Co., Depere, Wis., are putting up an addition to their garage.

Charles Wouters, Chicago, Ill., is putting up a 125x195 ft. garage to cost \$30,000. It will accommodate 100 machines.

Dittmer & Stallbaum, Elkader, Iowa, are completing a \$20,000 garage to care for their present automobile and accessory customers.

Stanley & Leslie, Hillsboro, Ohio, have bought the James Kelly garage.

C. E. Baker & Sons, Bloomdale, Ohio, are building a 50x100 ft. garage of concrete block construction.

James W. Bedwell, Carlisle, Ind., has begun business in his new Eaton street garage.

Joseph Frager, Oxford, Ind., has opened a garage and repair shop.

A. D. Snyder, Linden, Ind., is enlarging the repair department in his garage.

Ernest Buck, Martin, Mich., is completing his two-story garage and repair shop and accessory room.

H. F. Jansen, 120 S. Second St., Springfield, Ill., will carry supplies and accessories in his new garage.

W. A. Coal, Marion, Ind., has bought the garage at Fifth and Branson Streets.

Keller Realty Co., Milwaukee, Wis., are putting up a \$40,000 garage on Fifty-first Street. Accessories will be carried,

George Cole, Storm Lake, Iowa, has bought the accessory department of the White Front garage.

Henry Fuhr, Macomb, Ill., is reconstructing the front of his garage, giving added show and office room.

A. W. Hughes & Co., Littleport, Iowa, are completing their new garage. It will be modern in all respects.

Low & Kurtz, Rockwell City, Iowa, have completed the additions and improvements in their garage. Much up-to-date machinery has been added.

L. F. Haemer, East Moline, Ill., announces the opening of his new garage.

Starr Plano Co., Richmond, Ind., are remodeling their building and will devote adequate space to a new garage.

Chas. F. Stengel, Jefferson, Wis., dedicated his new garage with a public reception, followed by a dinner to his employees.

Charles Humphreyville, New Philadelphia, Ohio, has leased the new \$12,000 garage built by the Ohio Sales Co.

Pearley & Hall, Mt. Ayr, Iowa, have opened their new two-story garage, said to be the finest in southern Iowa.

Stewart & Wolaver, Owasso, Mich., have bought the Sutlerby garage and are operating it in connection with their Chevrolet agency.

John M. Henderson, Niles, Ohio, has opened an up-to-date garage on North Main street. Accessories also are handled in connection with the Overland agency.

Mr. Garageman, you can't afford to miss the Chicago Auto Show and A. A. G. O. Convention, in Chicago, week of Jan. 27-Feb. 3.

## Western States.

L. S. Tinder, Liberal, Kansas, has bought an interest in Lee Larrabee's garage.

C. A. Miller and U. S. McDonald, Rocky Ford, Colorado, have bought the Ray Herrington garage.

Alvin Hughes and W. J. Frawley, Stillwater, Minn., have bought out the garage of Miller & Vasall.

William & Henry Mason, Chanhassen, Minn., have completed a new garage and repair shop.

Henry White, Lincoln, Kansas, has bought the vulcanizing plant and repair shop of White & Kester.

Leo Rlester, Kellogg, Minn., is completing a fine garage building and will install a complete repair shop and accessory line.

Fred F. Gerber, Winster, Minn., has bought the interest of Andrew Heimerl in the Flasch & Heimerl garage.

John Florin, 1396 Van Buren St., St. Paul, Minn., is completing his new 50x150 ft. garage.

Watson Auto Co., Kinsley, Kansas, have added a repair shop to their garage.

Gene Canton, Peabody, Kansas, has opened a garage and repair shop.

M. N. Overall, Caldwell, Kansas, is putting up a 50x130 ft. garage and repair shop. He also will carry accessories.

Denver Motor Sales Co., Denver, Colo., is putting up a \$15,000 garage at 2985 Federal boulevard.

John W. Maher, Devils Lake, N. D., has rented the garage recently built by Roberts & Dixon.

O. P. King, Highmore, S. D., is building an up-to-date garage in addition to his automobile and accessory salesrooms.

Fred Ott, Barrows, Minn., has bought a school building and is changing it into a garage.

Your insurance premiums can be lowered, pages 25 and 26



## M-P PISTON RINGS

**For Every Car**

YOU need only one kind of piston-ring in stock—the M-P. One-piece; concentric; leak-proof. Made of close-grained grey iron, accurate to one one-thousandth of an inch. Simple lock-joint never leaks compression.

**STOCK M-P PISTON - RINGS**

and watch your customers register satisfaction. Write today for dealer's terms.

**THE METAL PRODUCTS CO., St. Louis, Mo.**



## S-M-C

Safety always—all ways  
if you see "S-M-C" on every roll of brake lining.  
Made right—it holds right.

### \$1.50 FORD SET

—complete with three proper lengths for transmission, and all rivets required. For sale by wide-awake dealers. If your dealer hasn't it, send his name and \$1.50—we'll send it direct, postpaid.

**STAYBESTOS MFG. CO.**  
The "Modern" Factory  
5518 Lena St., Germantown, Philadelphia

**\$1.50**  
equips Ford car



## FORD AUTO HEEL REST

A GREAT CONVENIENCE TO MOTORISTS



Locates the heel for both clutch and brake pedals—gives the feet a comfortable resting place—protects the rubber mat. Made of frosted aluminum. Will not flatten, wear through or tarnish. A neat, useful footrest all car owners will appreciate. We also make the Auto Heel Rest used extensively in other cars.

Dealers, send for circular and trade discount.  
Made Only By  
**J. L. LUCAS & SON, Bridgeport, Conn.**

## K-P PISTON RINGS

Put Energy In Your ENGINE



If your car eats up fuel and oil, lags on the level, crawls up hills and fails to live up to rated horse-power, blame it on poor piston rings. K-P Rings are the remedy. All the joints are evenly distributed and blocked. The Tongue and Groove Side-lock, a K-P Patent, prevents scoring of cylinders, holds the ring in proper position and prevents carbon pockets. Send for free booklet, "Economy and Power".

K-P Rings are sold by all up-to-date dealers and jobbers.  
**KEYS PISTON RING CO. 3008 Olive St., St. Louis, Mo.**

## The PERFECTION CYLINDER GRINDER

will regrind all sizes of motorcycle and automobile cylinders. This grinder will fit on any ordinary engine lathe.

Details on Request

**WOOD & SAFFORD MACHINE WORKS**  
Great Falls, Mont.

## American Bumpers




Best Bumper on the Market

Ask your jobber for "AMERICAN" Bumpers. They are quick sellers.

**AMERICAN BRASS FOUNDRY CO.**  
Milwaukee, Wis.

## Hydraulic Arbor Presses



work easier than any others.


We make many sizes for many purposes.

WRITE FOR CATALOG

**Lourie Manufacturing Co.**  
SPRINGFIELD, ILL.

Tire Applying Press

## The Heiser Improved Cylinder Reboring Tool will put "PEP" into your work



New improvements make it far more efficient. The time of operation has been reduced one-half; and is the only reboring tool that is self-sharpening. The only tool (except expensive grinders) that will not leave the finished cylinder slightly tapered toward the bottom. The only tool which rebore between centers—this insures finished cylinders square with the crank shaft, round, straight, and true.

The Heiser Improved Cylinder Reboring Tool makes good shops out of poor ones and better ones out of good ones. Descriptive literature on request.

**HEISER SPECIAL TOOL CO.**  
333 Rogers Bldg., Kingston, Missouri

B. E. Bakken, Gwinner, N. D., has bought the Abrahamson garage.

A. G. Auchampach, Ipswich, S. D., is completing a new garage building.

Ferguson & Crosby, Smithwick, S. D., are putting up a garage building.

F. G. McLain, St. Francis, Kansas, is putting up a new garage building and show room.

Crews & Tucker, Greensburg, Kansas, will open the Gally garage, carrying also an accessory line.

J. E. Ransford, Los Angeles, Calif., is putting up a \$25,000 garage at 7028-34 Hollywood boulevard.

J. A. Donnelly, Cascade, Iowa, has opened a repair shop and is carrying accessories.

Bousman Garage, Beaver City, Neb., has opened. Full line of accessories is carried.

Wm. Banworth, Gary, S. D., is putting up a 50x65 ft. garage and show room.

Pondera Valley Automobile Co., Conrad, Montana, is building a 68x120 ft. annex to its garage.

Jas. Grabart, Smith Center, Kansas, has opened a repair shop and accessory line.

Hagan Bros., Woodworth, N. D., are building a large addition to their garage.

Horning Auto Co., Nashua, Montana, George Zurich, manager, have bought the Albert Neiss garage.

Oscarson & Dahl, Wahpeton, N. D., have bought and are operating the Wahpeton garage.

Dupont Power Co., Bovey, Minn., are building a brick garage and accessory display room.

W. D. Kenney, Wichita, Kansas, is building a 50x150 ft. garage on N. Lawrence Street.

L. Gray, Overly, N. D., has opened a new garage and repair shop.

B. G. Wells, Rush City, Minn., has bought the Ometh & Hanson fire-proof garage.

Boynton & Gilman, Medford, Minn., are the new proprietors of the Sanders garage. Erskine & Logan Co., Grand Rapids, Minn., have opened their new garage.

Trowbridge & Stephens, Fresno, Calif., are completing their new \$10,000 garage.

Rhund & Sons, Lincoln, Kansas, have bought the Windsor garage.

Reinhard Bros., Minneapolis, Minn., are putting up a \$70,000 garage building. They will carry automobiles and accessories.

R. Perrouit, Crosby, Minn., is completing a new garage and repair shop.

Ira Russon, Lehi, Utah, has bought an interest in the State St. garage.

Sam N. Skow, Lamberton, Minn., has bought the Bendixon garage. He will specialize in repair work and accessories.

Trefey Motor Co., Topeka, Kansas, has opened a new garage and accessory line.

J. R. Smith, Norton, Kansas, has opened his new garage and is carrying accessories.

A. L. Hardin, Garden City, Kansas, has opened a repair shop and has a line of accessories.

Lancaster & Bitner, Kinsley, Kansas, have bought the Oster & Merton garage.

Gile & Francis, Caldwell, Kansas, are opening a new garage and accessory line.

Schwerman & Mitchell, Beloit, Kansas, are opening their garage and will carry accessories.

Dondelinger & Seltzer, St. Peter, Minn., have occupied the new addition to their garage.

Oswald Brekken, Blinford, N. D., has bought the F. W. Lee garage.

Guy Kirscher, Townsend, Montana, has bought an interest in the Hurlbert garage.

C. R. Smith, University Place, Neb., is building a repair shop addition to his garage.

Barrows & Co., Herman Minn.

Henkin & Smith, Madison, S. D., have bought the Madison Auto & Supply Co. garage.

E. Olson, Hardwick, Minn., has bought the Lewis Warner garage and will carry accessories.

D. J. Burgess, Santa Rosa, Calif., has returned from Alaska and joined the force of the Overland garage.

Young Bros., Lyons, Neb., have sold their garage to a syndicate of forty farmers. Large additions to the building and business are planned. Harry Pearson and Edgar Teaton are leaders in the syndicate.

Jones Bros., Mankato, Minn., have nearly completed their new garage. It will be kept open day and night. Many modern conveniences are included in the building.

### Southern States.

Charles Huder, Polo, Missouri, has begun business in his new garage.

Hobby & Read, Scottsville, Ky., have opened their new \$12,000 garage. It has 6,500 feet of floor space.

Mobile & Mitchell, Beeville, Texas, have bought and will enlarge the Borland garage.

A. E. Laudon, Waurika, Oklahoma, is the new proprietor of the Laudon & Crowell garage.

L. F. Neese, Bland, Missouri, is installed in his new garage.

Robert Crow, Madisonville, Ky., is building a 40x120 ft. garage.

J. C. Barnhart, Booneville, Mo., has opened a vulcanizing shop.

Campbell & Sallises, Manitou, Oklahoma, have opened their new garage and are carrying accessories.

Walter Voges, Boerne, Texas, is opening a new, two-story garage and repair shop. Accessories are carried.

Pickard Bros., Norman, Oklahoma, have bought the C. L. Taylor garage.

Hughes & Patterson, Tyler, Texas, are opening a new garage and will carry accessories.

Brogan & Patterson, Huntsville, Mo., are the new proprietors of the Huntsville Motor Co.'s accessory line and garage.

M. D. Kerr, Slater, Mo., has bought the J. F. Evans garage.

Trout & Porter, Brason, Mo., are building a new garage and display room.

R. P. Harper, Marceline, Mo., has opened the garage and accessory line he recently bought of J. O. Case.

Archie Dale, Liberty, Mo., has opened his repair shop and accessory line.

Smile into the face of the world and a smile comes back. Render good service to others and good service is returned to you. Show a spirit of helpfulness and that spirit will surely send back aid to you of a like kind. Think good thoughts regarding others and the same good thoughts will be reflected back to and benefit you.

### Miscellaneous.

A semi-friendly receiver has been appointed for the Automobile Supply Manufacturing Company, Inc., Brooklyn, N. Y. Creditors asked a receivership, on a showing of \$350,000 indebtedness. President Madison admitted the indebtedness but claimed a larger total of assets and made no protest over the appointment of Charles A. Brody as receiver.

A compressed air tank in the West Salem (Wis.) Motor Co. garage exploded, causing much property damage and the serious injury of several persons. The tank was guaranteed to withstand a pressure of 200 pounds, but is said to have burst at 180. Many residents of West Salem thought the explosion was an earthquake. An automatic blow-off short of the danger point would prevent such an explosion.

Martin Rasmussen and son Melvin were seriously, perhaps fatally burned, and two others severely injured by the explosion of a barrel of gasoline in the Rasmussen garage, Morris, Minn. The property damage included the entire loss of the building and the turning into junk of six automobiles in the garage; over \$10,000. The explosion was heard ten miles away. It was caused by the draining of a barrel of high test gasoline too near a hot stove.

Seattle, Washington, has a cafeteria or garateria, depending on the way you look at it and your degree of sobriety. The customer drives his car into an enclosed room and there tinkers with its Latin internals. When he finishes he pays for the room, for the use of tools and any accessories he has used. Walt Mason will agree a certain class of people is not all dead yet; one is born every minute, you know.

Eleanor C. Allen, 6025 Washington avenue, Philadelphia, began building a garage under her front porch. Her neighbors protested, but Eleanor wouldn't stop. Then the neighbors invoked the aid of the law and an injunction was issued. Maybe Eleanor's ancestors "kept the pig in the parlor."

Uncle Sam isn't content with his present industries in competition with private ownership. He is now financing the building of a postoffice garage in Philadelphia. It is nearing completion and will be a whopper. It will be able to house and do all the repair work on 200 cars, there now being 106 in the government service. An entire car can be built in the repair shops. Seventy-five machinists and repairmen will be employed. It isn't of record that Philadelphia garagemen have made any protest.

John Belaff, chauffeur for Peter H. Havey & Sons, New York City, didn't ring up a fire alarm when his automobile caught fire. He jumped in, threw the clutch into high and hit a few of the higher spots to the nearest fire engine house. There he nursed his burns while the firemen did a prime job of fire fighting.

Boston also has fallen for the municipal garage. As usual, the reason given is that city officials are using municipal cars for joy riding. Just how this wrong can best be overcome by taking away the business of private garages is something the Boston garagemen should have explained to them. None will claim the repair work or storage costs less in a municipal garage. The argument seems to be that public officers consider municipal cars a private snap and consequently the garageman must suffer. Wouldn't it be well to go after the criminals themselves instead of shooting up the innocent bystanders?

Police Chief Snively of Los Angeles has secured a permit for a garage directly in front of his residence. The permit was granted after verification of Mr. Snively's claim that a goat couldn't climb to the rear of his lot.

An eight-story garage is going up in Cleveland. It will be located on the Public Square.

University of Iowa has installed its automobile testing plant in a new brick building. It will tell the actual horse-power of any machine and the best way to develop the most power on the least fuel.

A baby carriage garage is the latest thing in Brooklyn.

## KEEP YOUR BOLTS WHERE YOU CAN FIND THEM



KEEP YOUR REPAIR PARTS, SUCH AS BOLTS, SCREWS, COTTER PINS, BALL BEARINGS, ETC., WHERE YOU CAN FIND THEM INSTANTLY, AND WHERE THEY WILL BE PROTECTED FROM DUST, RUST, ETC., IN A REVOLVING CASE MADE IN MANY SIZES, OF HIGH GRADE MATERIAL.

Write for a Catalog

**AMERICAN BOLT AND SCREW CASE COMPANY**  
DAYTON, OHIO.

## American Gasoline Filling Outfits

**Safe — Quick — Accurate — Economical**



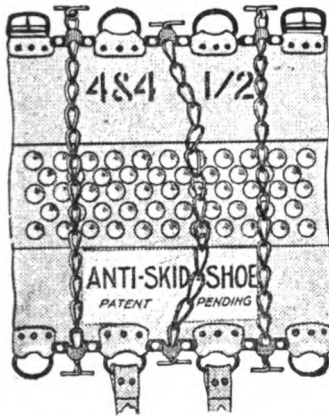
Double Acting Carb Pump (Patented)

American Double Acting continuous flow gallon-measuring pump delivers gasoline at the rate of 14 gallons per minute, which is faster than most "Five Gallon" pumps and costs much less. Accurate measurement, accessible valves, fully equipped with filter, meter, hose draining valve. With or without electric light fixture; Storage tanks, any capacity desired.

All kinds of storage outfits for gasoline and oils, paints, varnishes, etc., for public or private garages, stores, factories, railroads, etc.

Write for bulletins giving complete information, prices, etc.

**The American Oil Pump & Tank Co.**  
CINCINNATI, OHIO



## ANTI-SKID-WEAR

Can be used as a blow-out patch—strapped to weakest part of tire—used as pull-out when stuck in mud. Will add one-third more life to tire, and will pay for itself in a short time.

The Anti-Skid Shoe is strong in construction and reasonable in price. Write for price, sizes and dealers' discounts.

**AUTO ANTI-SKID SHOE MFG. CO.**

31 Nassau St. New York



## All Live Dealers SELL No-Stitch Cement

A sample can will prove its merits at once.

One ounce can sufficient to repair a number of lights.

Retails at 25c. Pints, for large consumers at \$2.00.

Write today for your trial can

**Auto Products Mfg. Co.**  
40 Elm St., BUFFALO, N. Y.



## RADIATOR CURE STOPS LEAKS

Positively the best preparation for curing leaky radiators. Highly endorsed by garagemen and automobile dealers. Would you like to represent us? Write for agency particulars and sample package for testing.

**THE M. W. DUNTON COMPANY, Providence, R. I., U. S. A.**

## "CURKO" SOCKET WRENCHES

Are turned from the best **Solid Bar Stock** and are **Heat Treated**. For

## STRENGTH and RELIABILITY

They are unexcelled. Ask for dealer's discount.

**Price \$1.00**



**Currier-Koeth Mfg. Co., Coudersport, Pa.**

SINGLE ROW

DOUBLE ROW



THRUST

ROLLER

## REGROUND—NEW—EXCHANGED STEEL BALLS

Satisfaction Guaranteed

1919 Michigan Avenue - CHICAGO

—ALSO—

Philadelphia

Frankford, Pa.

Boston

New York

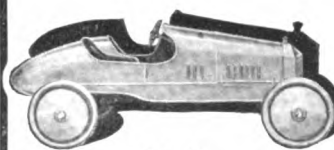
Prices until Jan. 1st, 1917  
Model L, \$ 85.00  
Model H, 115.00  
f. o. b. Peoria  
Prices until after Jan. 1st, 1917  
Model L, \$100.00  
Model H, 138.50  
f. o. b. Peoria

## A "FASCO" RACING BODY FITS YOUR FORD

Made of the very best extra heavy steel and fine workmanship. The lines for "FASCO" were taken direct from the famous French racers. The classiest speedster body on the market. Sold complete, ready to mount on your Ford chassis.

PRICES ADVANCE JAN. 1, 1917

Our supply of materials laid in before the great advance in price will be exhausted by the first of the year. Order yours now, as the 1917 prices will be considerably higher. Write for particulars and specifications today. Agents wanted where we are not represented.



**Fried & Stonier Co.**  
Peoria, Dept. 17 Ill.

# A Review of The Market

## Gasoline.

The gasoline market has advanced  $3\frac{1}{2}$ c within the month in Chicago territory, making the current quotation for the fluid 19c in tank cars. In southern territory a similar advance is recorded, the Louisiana price being 23c. The New York market is quoted at 22c in steel barrels.

## Iron, Steel and Metals.

The foreign demand for these products, supplemented by an expanding domestic consumption, is productive of a strong price situation.

	Jan. 10,	Jan. 12,
Pig iron, per gross ton:	1917.	1916.
No. 2 X, Philadelphia.....	\$30.00	\$20.00
No. 2, furnace, Chicago.....	30.00	18.50
Basic, Valley furnace.....	30.00	17.75
Bessmer, Pittsburgh.....	35.95	21.45

Finished iron and steel, per lb. to large buyers:	Cents.	Cents.
Iron bars, Philadelphia.....	3.159	2.259
Iron bars, Chicago.....	3.00	1.75
Wire nails, Pittsburgh.....	3.00	2.10
Cut nails, Pittsburgh.....	2.95	2.00
Fence wire, base, Pittsburgh.....	2.95	1.95
Barb wire, galv., Pittsburgh.....	3.85	2.95

Metals, per lb. to large buyers:	Cents.	Cents.
Lake copper, New York.....	27.75	24.00
Electrolytic copper, New York.....	27.75	23.87½
Spelter, St. Louis.....	9.25	17.25
Spelter, New York.....	9.50	17.50
Lead, St. Louis.....	7.32½	5.75
Lead, New York.....	7.50	5.90
Tin, New York.....	42.50	41.50
Antimony (Asiatic), New York.....	14.25	41.00
Tin plate, 100-lb. box, Pittsb'gh.....	\$7.00	\$3.75

## Scrap Metals.

The wholesale dealer's buying prices for scrap metal to garages and other sellers are: Heavy copper, 24@24½c; heavy copper wire, 24@24½c; light copper, 21@21½c; red brass, 20½@21c; red car boxes, 18@18½c; brass clippings, 17@17½c; red brass borings, 18@18½c; yellow brass turnings and borings, 14½@15c; heavy brass, 15½@16c; light brass, 12½@12½c; medium brass, 13½@13½c; auto radiators, 11@11½c; zinc, 7½@7½c; lead, 6½@6½c; lead dross, 4½@4½c; battery plates, 5@5½c; No. 1 pewter, 28@29c; block tin pipe, 39@40c; tin foil, 33@34c; solder joints, 8½@8½c; old nickel, 20@22c; new aluminum, 45@46c; aluminum borings and turnings, 20@21c; cast aluminum, 28@30c; mixed babbitt scrap, 7½@8c; copper shells, 6½@7c.

## Motor Stocks.

Prices of motor stocks slumped in sympathy with the general market when the peace scare came.

	Par.	Bid.	Asked.
American Motor Truck.....	\$10.00		\$5.00
Ajax Rubber.....	50.00	\$73.00	74.00
Alliance Tire and Rubber.....	10.00	5.00	8.50
Case, J. I. (Preferred).....	100.00	80.00	89.00
Chalmers Motors (W.I.).....		33.00	35.00
Chevrolet.....	100.00	132.00	138.00
Chandler.....	100.00	100.00	101.00
Coe Motors.....	1.00	.23	.35

Eagle Macomber.....	1.00	.35	.50
Elgin Motors.....		10.00	12.00
Emerson Motors (Preferred).....	10.00		10.00
General Motors.....	None	600.00	
General Motors (Preferred).....	None	121.00	125.00
Grant Motors.....	10.00	7.50	8.50
Goodrich, B. F. (Common).....	100.00	58.50	59.25
Harroun Motors.....	10.00		6.00
Hupp Motors (Common).....	10.00	4.00	5.75
Kelly-Springfield Tire (Common).....	100.00	62.00	64.00
Keystone Tire and Rubber (Common).....	10.00	16.00	17.00
Imp. Carbon Chaser.....	1.00	.25	.30
Maxwell Motors (Common).....	100.00	52.00	53.00
Maxwell Motors (2d Preferred).....	100.00	37.00	38.00
Mitchell Motors (W. I.).....	None	50.75	54.00
Motor Products.....	None	55.50	56.50
National Motors.....	None	33.00	37.00
National Rubber.....	10.00	7.00	8.50
Peerless Truck and Motor.....	50.00	18.00	20.00
Pierce-Arrow.....	None	51.00	54.00
Republic Motor Truck.....	None	65.00	68.00
Saxon Motors.....	100.00	65.00	68.00
Scrimps-Booth Corporation.....	None	35.00	37.00
Smith, A. O., Corporation.....		39.00	41.00
Smith Motor Truck.....	10.00	5.50	6.00
Springfield Body Co.....	100.00	78.00	82.00
Springfield Body Co. (Preferred).....	100.00	113.00	120.00
Studebaker Corporation.....	100.00	105.00	106.00
Studebaker Corporation (Preferred).....	100.00	107.00	108.00
Stutz Motors.....	None	48.00	49.00
United Motors.....	None	46.00	48.00
U. S. Rubber (Common).....	100.00	63.50	64.00
U. S. Rubber (Preferred).....	100.00	111.50	112.50
White Motors.....	50.00	49.00	53.25
Willys-Overland.....		36.50	37.00
Willys-Overland (Preferred).....		96.00	98.00
Wright Martin Aircraft.....		14.00	16.00

## NO GAS CAN ESCAPE OWING TO THE CONSTRUCTION OF A. C.



## PISTON RINGS

A. C. Nonleakable Piston Rings consist of two ring elements—outer and inner ring. The stagger cut in outer ring prevents gas from escaping down cylinder wall. The inner ring prevents gas from leaking at bottom of ring when stagger cut opens as result of wear.

### Now Ring Is Self-Adjusting

As the outer ring wears against cylinder wall, the inner ring takes up this wear by expanding, always having a metal to metal contact wherever gas is liable to escape. A set of rings will last the life of a motor.

### Guaranteed

to save gasoline and oil. Perfect compression, more power and speed, and keeps excessive carbon from forming in explosion chamber; or money refunded if they fail to give satisfaction after 30 days' trial.

Write for Agency Proposition and Moderate Prices

**A. C. NONLEAKABLE PISTON RING CO.**  
Compton, Ill.

## We Rebore Cylinders

By specializing, we make **ridiculously low prices** on reboring cylinders.

Our prices include new light weight semi-steel pistons and rings. Work neatly and promptly done and **absolutely guaranteed**.

### PRICES QUOTED

Buick Model No. 10, \$20.00

Write for Particulars

**ALLEN & CURTISS CO.**  
MISHAWAKA, IND.

## UNITED FLEXIBLE METAL LINED GASOLINE AND AIR HOSE

Use UNITED Flexible Metal Lined GASOLINE HOSE and UNITED Flexible Metal Lined AIR HOSE and bring your station up to the ACME in EQUIPMENT. UNITED Flexible Metal Lined GASOLINE HOSE has been approved by The Board of Fire Underwriters. The largest Oil Companies, Garages and Filling Stations in the country are using our Gasoline Hose. We manufacture our hose in all sizes and attach couplings to fit any make of pump. Send us your requisitions and let us supply you with THE HOSE of the LONGEST SERVICE.

**UNITED METAL HOSE CO.**  
510 W. 24th Street NEW YORK CITY




**WALL'S  
CYLINDER REBORING  
and  
PISTON SERVICE**

Twenty years' experience of high class automobile work of our President, Mr. Wall, enables us to render an expert service in auto machine work of all classes. Every job has Mr. Wall's personal supervision—every mechanic an expert.

Prompt Service  
Reasonable Charges

**Wall Machine & Mfg. Co.**  
4513-15 Lincoln Ave.  
CHICAGO, ILL.


## BATTERY CHARGERS



Our line is the most complete—both Motor Generator sets and vibrator type. A size for every requirement, from 1 to 24 battery capacity.

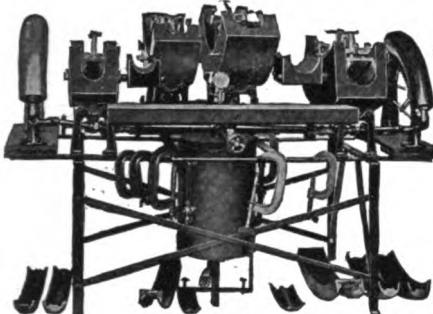
Free Booklet, "A Practical Treatise on the Storage Battery," free to all garages, repairmen and charging stations.

Write for this helpful book.



**ST. LOUIS ELECTRICAL WKS.**  
4005 Forest Park Blvd., St. Louis, U.S.A.

## BIG MONEY DOUBLE TREADING



Lots of Work. Vulcanized Double Treads wear better, look better. This Vanderpool Vulcanizer does double treading and repairs all size case and tubes from 3 to 5-inch.

Vulcanizers \$25 up

**VANDERPOOL CO.,** SPRINGFIELD, OHIO  
and 1044 S' Main Street, Los Angeles, Cal.

## DEALERS MAKE MONEY!

Get the Agency for the "Tonford" truck unit,—one of the quickest selling propositions you ever tackled. Attached to a Ford chassis, makes a one-ton truck. Light, strong, economical, easily handled. Drygoods merchants, furniture dealers, retailers in almost every line, bottlers, farmers, creameries, all want it. Find it best possible buy.

**\$325**

# Tonford

**\$325**

TRADE MARK

All the facts that sell the Ford, sell the Tonford. Highest grade truck attachment made—easiest to attach—strongest, most durable. Best constructed truck unit on market—lowest priced. Get busy now, while territory is still open. Write today. Learn how "Tonford" dealers pile up profits.

**DETROIT TRUCK CO., Mfrs., Detroit**

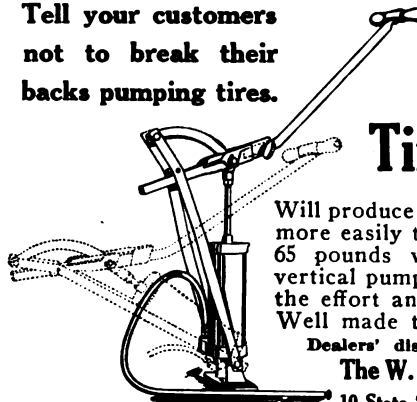
## KENNEDY Auto Storage Covers

furnish efficient protection for cars in dead storage. They are made of strong, heavy paper, properly reinforced, and in standard sizes to fit any car.

Made only by

**The Kennedy Car Liner & Bag Co.**  
SHELBYVILLE, IND.

Tell your customers not to break their backs pumping tires.



**\$500**

## Jensen Tire Pump

Will produce 90 pounds pressure more easily than you can pump 65 pounds with the ordinary vertical pump, with one-quarter the effort and in half the time. Well made throughout.

Dealers' discounts on request  
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Power  
Speed  
Noise  
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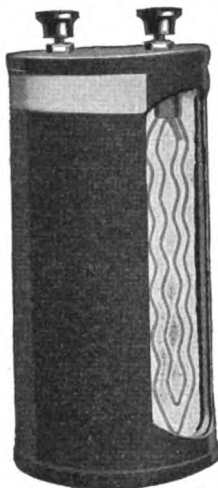
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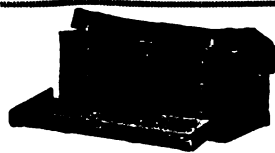
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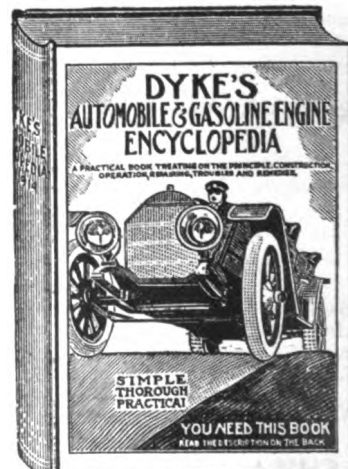
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## Tractors and Automobiles

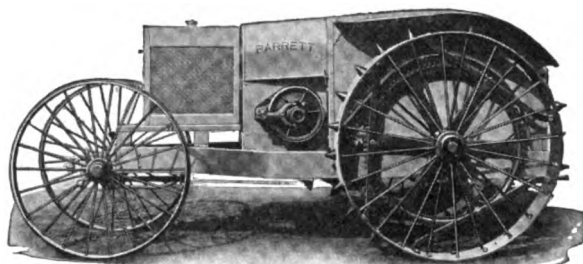
Sell side by side to the farmer

Using the same good judgment in selecting the tractor to sell that you use in selecting the automobile—you will choose the Parrett. A successful tractor manufactured by a reliable company.

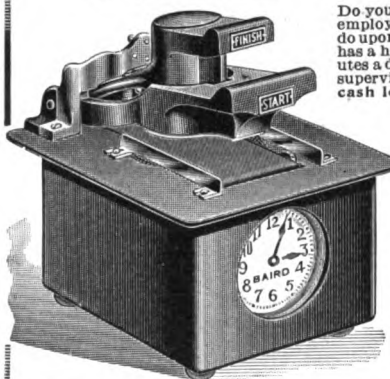
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Do you keep as careful a check on how your employees spend their valuable time as you do upon your cash? WHY NOT? Their time has a high cash value to you. A few minutes a day lost through lack of automatic supervision soon adds up into a heavy cash loss.

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AT LAST!  
The  
Perfect Polish!

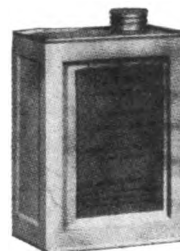
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A most wonderful new polish for Autos, Furniture, etc. Nothing like it. Once used always used. Positively guaranteed not to contain any acid or other harmful ingredients.

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We can **SAVE** you money  
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Guaranteed workmanship  
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### REBORED AND GROUND

PROMPT, EFFICIENT SERVICE.  
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### Simplicity

Is the simplest device conceivable and any car owner can readily understand the principle. No exhaust gases are used.

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ALLMAND  
"Stops that Leak  
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Closes space between panes, making it absolutely RAIN, DUST and WIND-PROOF.

Adjustable to any thickness of glass. Easily removed or replaced. Does not obstruct vision. Less than half inch wide.

**\$1.00**

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This is the creeper that you have been looking for because it is not made of lath and nails. It is of Hard Wood Strips, 1 1/4 by 3/4, bolted together.

Ball Bearing Casters. Padded Head Rest.

Will not break down under your weight. Comfortable to lie on with plenty of elbow room.

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Manufacturers and Distributors of  
**MOTOR ACCESSORIES**

Phone Calumet 138

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**RIGHT NOW**

**SAYERS CABINET MFG. CO.**

20 E. Jackson Blvd.

CHICAGO

Send descriptive matter, cut of cabinet, copy of guarantee, prices,  
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These tires are of double thickness and have 12 plies of fabric; therefore no punctures, no blow-outs. They are rebuilt by our special process, vulcanized and double treaded.

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Other sizes in proportion. Write for prices today. Send \$1 deposit for each tire ordered, and we will send the tire, balance C. O. D., subject to your examination and approval before paying for same.

**CHICAGO DOUBLE TREAD CO.**

1235-39 South Wabash Avenue

CHICAGO, ILL.

## Garage and Shop Market Place (Continued)

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**GARAGE FOR SALE**—In Pennsylvania city 25,000. Excellent location on National Old Trails Road. Long leasehold, plenty of room, steam heat. Tools, fixtures, steam heating plant. County agency for popular selling cars. Have made a hundred sales, and cars are making good. Repair work for tourists requires 3 men. Satisfactory explanation for selling. Address T. H. S., AMERICAN GARAGE AND AUTO DEALER.

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HOAGLAND TAXICAB CO., ELGIN, ILLINOIS.

### PARTNERS WANTED

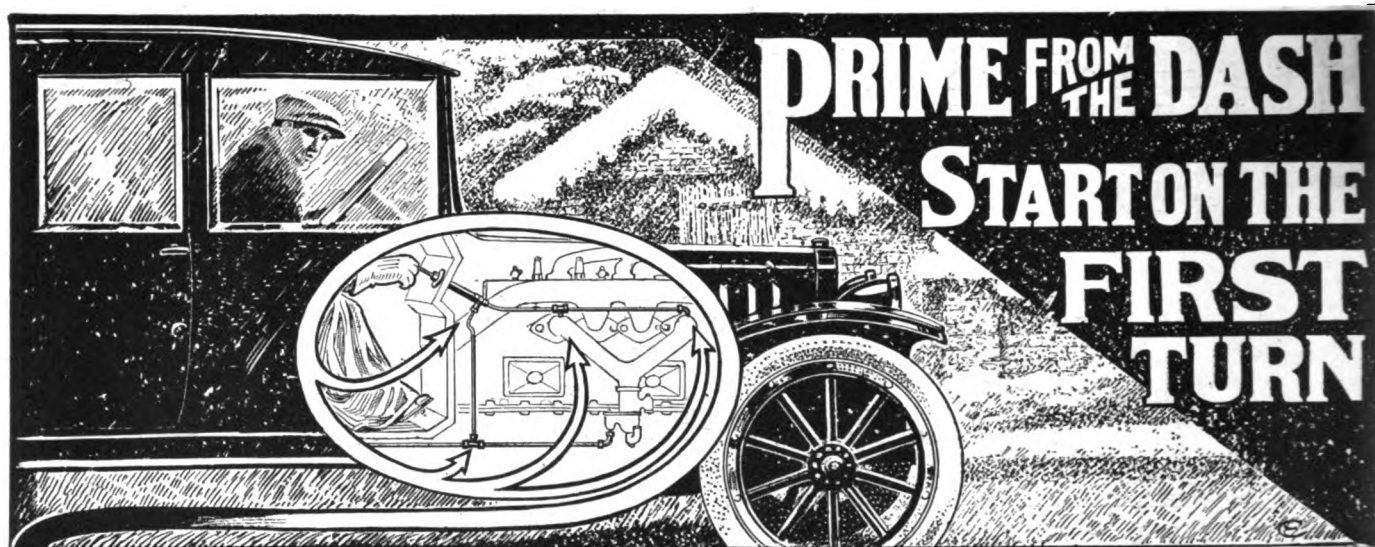
**PARTNER WANTED**—Practical Man in Battery Station and Tire Shop. Live Wisconsin town, 28,000. Equipment up to date; rent cheap. Excellent opportunity. Address 150, AMERICAN GARAGE AND AUTO DEALER.

### SITUATION WANTED

**SITUATION WANTED**—As manager or foreman of up-to-date Garage in Middle or Western state. Fifteen years' experience, all branches of the industry. Address 131, AMERICAN GARAGE AND AUTO DEALER.

**SITUATION WANTED**—Am at present manager of a garage. Ten years' experience in all branches auto business. Six years as general machinist. Would take charge of repair department of up-to-date garage. A-1 mechanic. Give best of reference. Address 130, AMERICAN GARAGE AND AUTO DEALER.





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Cash in on the big demand we are creating for the Imperial Primer—see our advertisement in the January 27th issue of the Saturday Evening Post and the large space used in all leading auto magazines and trade journals.

Every car owner who comes into your garage is a good sales prospect. An Imperial Primer will solve the cold weather starting trouble and encourage your customers to use their cars oftener in winter—meaning more money in gasoline, oil, etc., for you—besides the nice profit in the sale and installation of the device itself.



Within Easy Reach—  
Right on the  
Dash



A Gentle Pull  
Sucks in the  
Gas



A Gentle Push  
Sprays Vaporized  
Gas into Manifold

**A Necessity  
Not an Accessory**

**Imperial  
Primer**

**\$5 Complete  
for ANY Car**

Think what a **big** advantage it is, in these days of low grade gasoline, to be able to let your car stand for hours in the cold with the full assurance that it will **always** start on the **first** turn-over!

That is just what we **guarantee** the Imperial Primer to do on **any** car in the coldest weather! Drivers of old cars use the Imperial Primer all the year round to insure quick starting.

This little device is located on the dash of the car and sucks up gasoline from the main gas line and then sprays it into the manifold near the motor in the form of a fireable mixture which absolutely insures starting on the **first** turn.

This outfit consists of a small, substantially-made plunger pump, all necessary bolts, connections and tubing furnished, ready to mount on the dashboard of any car, any model. All connections made by the well-known Imperial Compression couplings. No soldering, flaring or threading required except on the manifold. Simple but complete directions for installation and operation accompany each outfit.

The Imperial Primer is just as necessary on cars having self-starters because it saves the batteries and gives a quick, positive start every time. To those who crank their engines by hand this is an **INDISPENSABLE** labor and temper saver. Try the Imperial Primer 10 days, money back if not satisfactory.

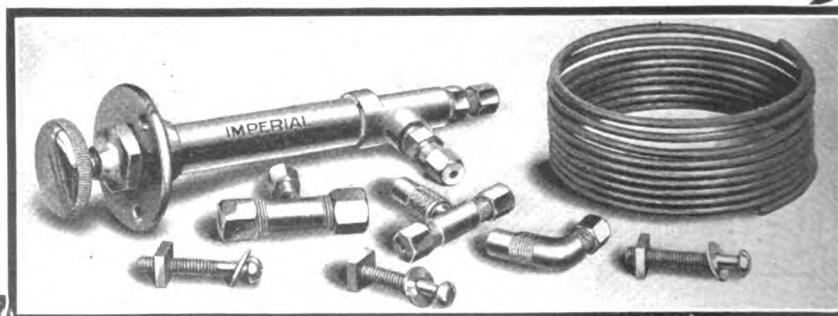
If your jobber cannot supply you, write us direct.

**Imperial Brass Mfg. Co.,** 529 So. Racine Ave.  
**CHICAGO**

#### OTHER IMPERIAL PRODUCTS

Oxy-Acetylene Apparatus  
Compression Couplings  
Gasoline Strainers  
Priming and Shut-Off Cocks  
Wixom Hand Tire Pumps  
Oil and Air Dash Pumps, etc.

Visit our exhibit at the  
**CHICAGO AUTO SHOW**  
Balcony spaces Nos. 90-91





# Biggest of them all!



**TRUCKMOBILE**  
**\$350**

and Ford Chassis Give  
You the Most Econom-  
ical One-Ton Truck.

## Biggest Because

1. The TRUCKMOBILE has a longer wheel base—133 inches.
2. The TRUCKMOBILE rides easier under light as well as heavy loads, due to spring construction and long wheel base.
3. Less side sway to frame and body on TRUCKMOBILE—due to method of spring attachment.
4. Wider frame—41½ inches.
5. More massive construction.
6. Fewer parts.
7. Bell sprocket that can be attached in a few moments—keys onto jackshaft.
8. Requires less time of dealer for making attachment to Ford chassis.
9. Destroys none of the used or unused parts of Ford car.

## You Said It Would Come

**Y**OU knew that the truck unit idea was too big a one—filled too vital a need—to stay as a makeshift. You knew that the truck unit had to be improved—standardized—just as the automobile had to be developed to its present perfection. In other words, you knew that the TRUCKMOBILE was coming!

Real engineering did it! For the last half a year TRUCKMOBILE engineers—among the biggest in the country—have been at work on the truck unit idea, **improving** it, just as the automobile had to be improved.

The TRUCKMOBILE is the answer.

As a result we are now able to come to you with a truck unit for converting a Ford car into a one-ton truck that is **biggest of them all!**

The TRUCKMOBILE is bigger in simplicity, bigger in strength, bigger in durability, bigger in economy, bigger in sales possibilities—bigger in everything but price and upkeep! Note the nine distinct and exclusive points of TRUCKMOBILE superiority. We have space only to list these briefly here. Write for the complete TRUCKMOBILE story and see for yourself that the TRUCKMOBILE is the best attachment for dealer to sell because it is the best for consumer to buy.

Only one dealer in your territory can be the TRUCKMOBILE dealer. Will it be you? Write us today. Don't delay—don't wait.

Write, wire, or better yet, come in and see us at once.

**The Commercial Truckmobile Co.**

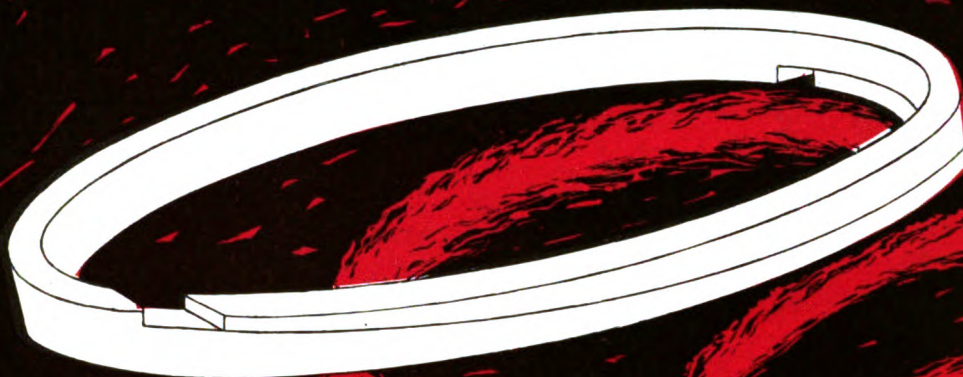
E. F. KIRCHBERGER, President

Dept. L-1, 1606 Michigan Blvd., Chicago, Ill.



# TRUCKMOBILE





# The Spiral Cut

(Patented)

## is the "Straight Cut" to Piston Ring Perfection

This exclusive, patented INLAND principle produces a piston ring that combines ALL the qualities that ALL inventors have sought:—

- a simple one-piece ring
- absolutely gas-tight
- of uniform width and thickness
- no weak or thin places
- strongest and most durable

The INLAND is a gas-tight piston ring in one-piece at a one-piece price—exactly what car owners want.

**Smashing big ads in Saturday Evening Post, Collier's, Literary Digest, motor magazines, etc.,**

will put INLANDS on the map with millions of motorists. They'll see at once the mechanical superiority of the INLAND—the lower price will do the rest.

## Stock "INLANDS" Quick!

Get a bunch of these "best sellers" on hand NOW—write for our deal to dealers today. Send for booklet.

# INLAND 1 PIECE PISTON RING

A continuous one-piece ring cut spirally for half its circumference; it UNCOILS in expanding, exerting uniform perfect gas-tight pressure against the cylinder wall. Scientifically treated so that free ends always hug tightly together. Quickly sets itself perfectly into cylinder—within a few thousand revolutions of the motor.

Standard equipment on Franklin, KisselKar, Pathfinder and Apperson; also on Weidely motors. Fully guaranteed.

Inland Machine Works, 817 Mound St., St. Louis, Mo., U.S.A.





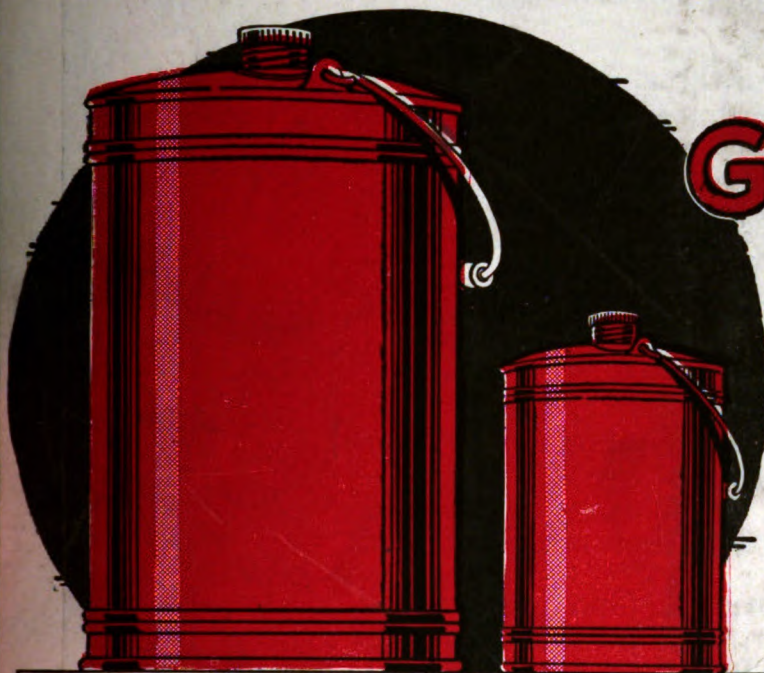
# AMERICAN GARAGE AND AUTO DEALER

Volume 7  
Number 9

CHICAGO

FEBRUARY, 1917

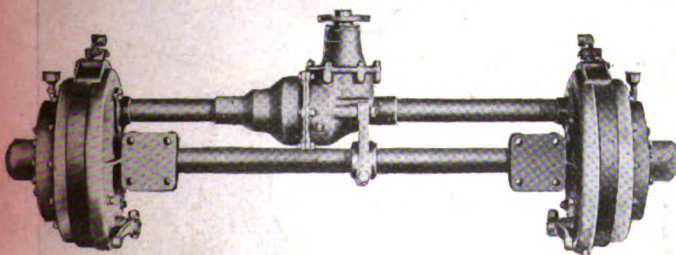
\$1.00 Per  
Year



## LOWERS GASOLINE AND OIL CONSUMPTION

## Russel

### Internal Gear Drive Axles



ONE of the greatest advantages the Internal Gear Drive Axle has over other types of Shaft Drive Motor Truck Axles, is that it is equally efficient at low, as it is at high speeds.

City traffic regulations put trucks to frequent low speed service, as also does heavy snow, deep sand and mud.

Because of its greater efficiency at all speeds, less power is required to propel an Internal Gear Driven truck at **low speed** than is required by trucks using other types of shaft drives.

Reduction in power means a saving in gasoline and oil consumption.

Bear this in mind when ordering your next motor truck, insist that it be equipped with a Russel Internal Gear Drive Axle.

Russel Motor Axle Company  
North Detroit



FAIR LIST PRICES



FAIR TREATMENT

# What "Cord" Means In **GOODRICH** **SILVERTOWN** CORD TIRES

**T**O settle exactly what the carelessly used, much abused term 'cord tire' really means, we have here stripped back the thick, tough tread of a Silvertown Cord Tire, and laid bare its flexible *two-ply, rubber-saturated, cable-cord* body.

Mark the sturdy *size* of the cord, and that it is *cross-wrapped round* the tire into a base of *two layers* Only.

As *each extra* ply in a tire means *extra* internal heat, which is the great tire destroyer, — Silvertown with but two plies is bound to outlast *many-ply* tires with their *multiplied* heat

Seek this durability with elegance, comfort, freedom from tire trouble, mileage, in Silvertowns, marked with the RED-DOUBLE-DIAMOND. You *cannot afford* to be without them.

The B.F. Goodrich Company Akron, Ohio

*Also makers of the famous fabric tires  
Goodrich Black Safety Treads*



## 10 Silvertown Cord X-cels

- |                                    |                  |                                   |
|------------------------------------|------------------|-----------------------------------|
| 1 Increased engine power.          | 4 Speedier.      | 7 Easier to guide.                |
| 2 Smoother riding.                 | 5 Coast farther. | 8 Give greater mileage.           |
| 3 Fuel saving.                     | 6 Start quicker  | 9 More resistive against puncture |
| 10 Repaired easily and permanently |                  |                                   |

*"Silvertowns make all cars high-grade"*

# A Master Ring Piston Packing

Here is the ring that will enable the motorist to get every ounce of energy and speed from the gasoline used in his car. It is made and designed by experts and permits no wastage through imperfect construction. Its uniform expansion insures a long life of efficiency. It takes up its own wear. Although it may be expanded to fit a worn cylinder it remains leak proof—a feature absolutely unique to the Jointless Piston Ring.

There are no outside joints to permit leakage—no exposed ends to score the cylinder—no carbon pockets, grooves, or other irregularities in its outside surface—no dowel pins or delicate parts to break off—nothing to get out of order. The JOINTLESS leads in every essential.

**PRICE ONE DOLLAR**

## DEALERS AND GARAGE MEN

Dealers, Garage and Repair-shop owners should immediately increase their stock of JOINTLESS piston rings to take care of the large demand. Order from Jobber now. Be ready for Spring business. The JOINTLESS will out-perform any other piston ring, regardless of cost. It is the logical ring to buy. If your jobber hasn't the JOINTLESS in stock, send your order direct to us. Liberal discount allowed.

# DETROIT PISTON RING COMPANY

**MANUFACTURERS**

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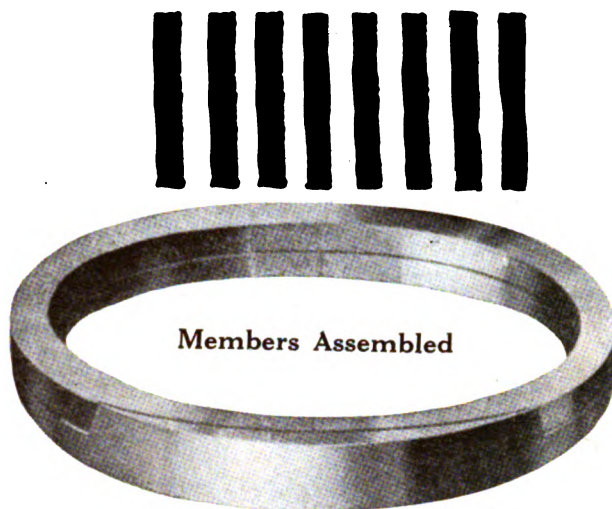
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**DETROIT, MICH.**

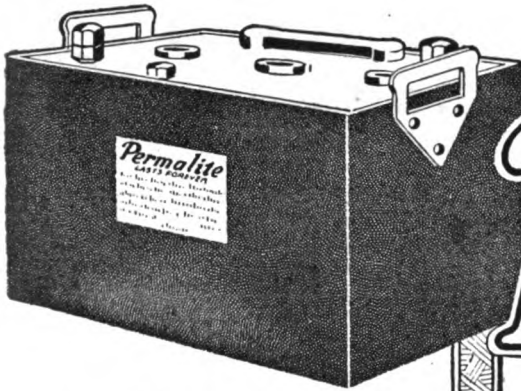


# JOINTLESS PISTON RINGS

**PATENTS PENDING**







# Permalite

**"LASTS FOREVER."**

**\$1.25**

**Exchange  
Fee  
Any  
Permalite  
Station  
in  
United States**

**C**ONSIDER the convenience to the motorist whose car is equipped with a Permalite Storage Battery. He can drive up to a Permalite Charging Depot—anywhere in the United States—and, upon the payment of \$1.25, exchange his battery for another Permalite, fully charged and in perfect condition.

To exchange a Permalite Storage Battery for another requires only fifteen minutes' time. Contrast this with the usual procedure when a battery requires recharging, where the motorist is compelled to leave his car in a garage for 24 hours, or else pay rent on another battery. In addition to this incidental delay or expenditure, the motorist with another battery often finds a repair bill staring him in the face.

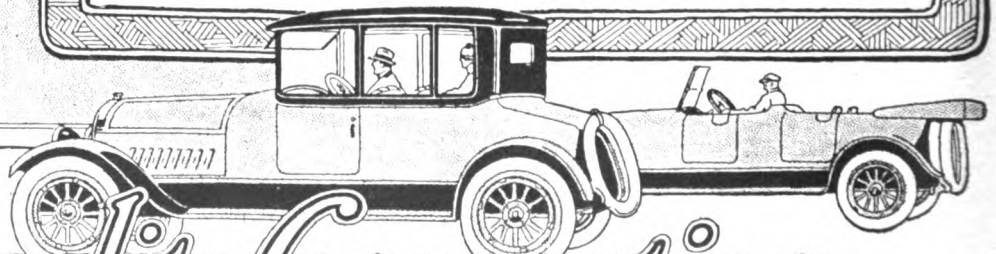
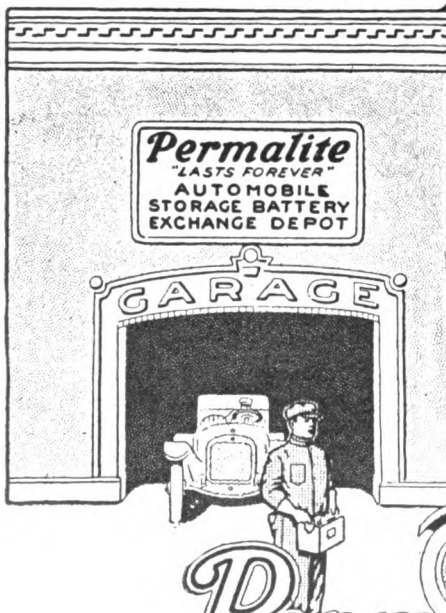
With a Permalite, the motorist never incurs a delay or expense or repairs on his storage battery, because when anything goes wrong with a Permalite, he exchanges his old one for a new, fully charged battery in perfect condition, at a cost in each case of only \$1.25.

In order to make Permalite as nearly 100% efficient as possible, we require all Permalite users to exchange their batteries at least once every three months.

After you have leased a Permalite, you have ended your storage battery troubles for life, because a Permalite lease, which costs about the same as any standard storage battery, is perpetual. From the standpoint of the motorist, a Permalite Storage Battery "NEVER WEARS OUT."

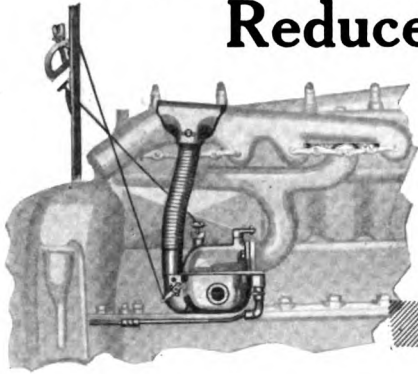
*We want a high-grade dealer in every locality  
to handle Permalite*

If you are a dealer, and can measure up to the standard demanded by Permalite, you can be our exclusive representative in your city, if your territory is not already taken. Write—or better, wire—today to Department AG3 for our proposition and descriptive literature.



**Permalite Corporation**  
INDIANAPOLIS, IND., U. S. A.

# Starts Easily and Quickly in Coldest Weather!! Reduces Fuel Costs $\frac{1}{2}$ !!!



This newest model AIR FRICTION CARBURETOR quickly pays for itself by its saving in mileage and ability to use **cheapest grade gas** and even a **mixture of gas and coal oil or kerosene**—and with better results!!!!

**30% to 50% More Power!!**

**30 Day Trial Offer**  
Car owners and dealers who question the claims we make for the Air Friction, can, by special arrangement, try it out on their cars **without cost.** ASK US ABOUT THIS OFFER!

## AIR FRICTION CARBURETORS

(Newly Perfected Model for 1917)

**250,000 now in use      4 to 55 miles per hour**

Start at once in coldest weather without any "spitting," "popping," or "missing." Quick, snappy "pick-up."

The Air Friction Carburetor enables your car to move off at once, **RUNNING PERFECTLY**, while **MOTOR IS STILL COLD**.

AIR FRICTION users get from 20 to 40 miles to the gallon. No other carburetor will allow your motor to run as **SLOWLY**, either "idle" or on **high gear**.

### A WONDERFUL PROPOSITION FOR "LIVE" DEALERS!!!

Over a quarter of a million AIR FRICTION CARBURETORS now in use, with a possibility of selling that many more this season.

Why don't you get in on the big profits in this business?

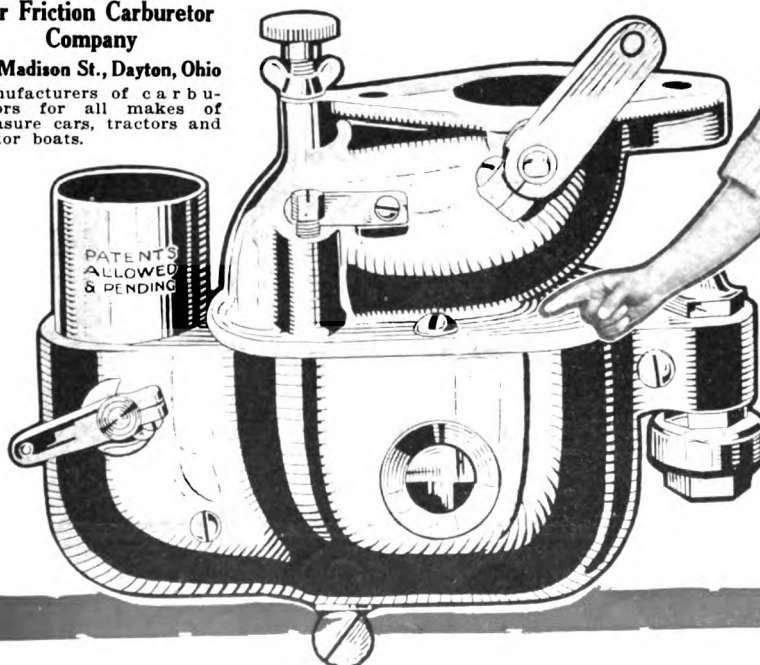
**We are backing the dealer this year with an advertising campaign in the national consumer publications. More AIR FRICTIONS than ever will be sold during the next few months.**

The AIR FRICTION shows a greater percentage of profit to the dealer than practically any other accessory.

If you're looking for a big proposition in the accessory business, and want enthusiastic customers as well as money in the bank—**WRITE OR WIRE US TODAY—DON'T DELAY A MINUTE. NOW IS THE TIME TO GET READY.**

**Air Friction Carburetor Company**

**145 Madison St., Dayton, Ohio**  
Manufacturers of carburetors for all makes of pleasure cars, tractors and motor boats.



Thousands of garage-men and expert motorists endorse the Air Friction.

# The ANSWER--

Popular interest had already been strongly aroused by the TRUCKMOBILE.

This fact we knew.

We really underestimated, however, the flood of positive approval from dealers and prospective buyers who came in by the hundreds during Auto Show Week.

At first they were critical. And some were skeptical.

But every one of them knew just what he wanted. Each one had his own fixed ideas on truck attachments.

Individually and collectively they had made the rounds and looked at each of the 57 varieties exhibited.

Then when they saw the real truck attachment—the TRUCKMOBILE—some of them were surprised they had overlooked it heretofore.

But all of them were delighted for they saw at a glance the answer to all their ideas and even more.

Each and every one of them appreciated and approved of the ten big points of superiority.

You will be convinced just as easily if you will look over the TRUCKMOBILE itself or let us send you our literature.



# "Biggest of them all!"

## Here Is Why—

- 1—The TRUCKMOBILE has a longer wheel base—133 inches.
- 2—The TRUCKMOBILE rides easier under light as well as heavy loads, due to spring construction and long wheel base.
- 3—Less side sway to frame and body on TRUCKMOBILE—due to method of spring attachment.
- 4—Wider body permitting larger body dimensions. Width 41½ inches.
- 5—More massive construction of carrying parts.
- 6—Fewer parts and fewer cares.
- 7—Bell sprocket that can be attached in a few moments—keys right on to the jackshaft.
- 8—Load strain on axle properly distributed because side springs are nearer wheel center than on others.
- 9—Requires less of dealer's time for making attachment to Ford chassis.
- 10—Destroys none of the used or unused parts of the Ford car.

# \$350

And a Ford Chassis  
(Old or New)

We only allow one dealer to handle TRUCKMOBILE in a territory, but you may rest assured everybody in that territory knows about him.

If you have not heard of a dealer in your territory write at once for our proposition.

The  
Commercial Truckmobile Co.  
E. F. KIRCHBERGER, Pres.  
Dept. L-2, 1606 Michigan Ave.  
Chicago, Ill.

# TRUCKMOBILE



# AMERICAN GARAGE AND AUTO DEALER

*Published Monthly*

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Guaranteed Circulation this Issue 15,000 Copies

# "NORMA" BALL BEARINGS

(Patented)



In this respect machines are like men—their worth lies in their capacity for bearing responsibilities. Upon the magneto, lighting generator and starting motor rests the responsibility for the satisfactory performance of a car or truck. And it is a significant fact that, almost without exception, these electrical accessories having the highest reputation for dependability, used upon cars of the highest repute, are insured against bearing trouble by means of "NORMA" Bearings. Which simply means that "NORMA" Bearings are known to be trustworthy bearings—and their presence in a magneto or lighting generator is an evidence of that quality which makes for long service.

Be Sure Your  
Electrical Accessories  
Are "NORMA" Equipped

## THE NORMA COMPANY OF AMERICA

1780 BROADWAY

NEW YORK

Ball, Roller, Thrust, Combination Bearings



# MAKE YOUR GARAGE GASOLINE HEADQUARTERS

**Service** A little word with a great meaning. Good will is the strongest asset of any business. SERVICE creates good will. SERVICE, properly rendered, will bring customers blocks out of their way to make their purchases. The AMERICAN GASOLINE PUMP enables you to render a valuable service to your trade.

## Honest Measure Brings Customers Back

Accurate measurement is an assurance of continued patronage, an assurance of full profits—a builder of regular patrons who would otherwise buy promiscuously. The American Pump guards your and your customer's interests.

## American Oil Storage Systems

The same quality—distinctive appearance and reasonable prices which predominate the American Gasoline Filling Stations, prevail throughout the complete line of oil storage systems.

Write for bulletins and prices.

## The AMERICAN OIL PUMP & TANK COMPANY

2165 Central Ave. Cincinnati, Ohio



# AMERICAN GARAGE AND AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE,  
GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. VII. No. 9

New York — CHICAGO — Detroit

February, 1917

## Standardization of Colors in Export Trade

ONE of the next steps to be taken by automobile manufacturers to extend their export trade is the standardization of colors. Some makers turn out cars finished in black, some in black bodies with yellow or white running equipment, some use other decorative schemes with the idea of employing colors as an aid in producing "distinctive" effects.

Now since the American car has become an export commodity, the color problem has taken on a new angle. In many countries a black car will find few or no purchasers. The color is abhorrent when attached to a vehicle. In one country the red car is almost universal, in others the popular car is yellow, or orange, or blue. By a scheme of standardization, to be worked out by the National Automobile Chamber of Commerce, large production without seriously increasing cost can be maintained and the color requirements of the export markets successfully met.

Even Ford will find, very likely, that he can afford to unbend a little and cater to the tastes of car buyers in South America and the oriental countries and still sell \$360 cars.

## Your Scrap Metal

EVERY garage and auto machine shop accumulates scrap metal which, with other debris, must be hauled away. This scrap metal constitutes an expense but, like many other expenses incident to modern business, it can be converted into an income.

Scrap metal has a market value. Provide for its orderly accumulation, then sell it when your stock is sufficiently large to command a price. Under the head, "Markets," this journal is quoting from month to month the prices Chicago buyers are paying for quantities usually offered by garagemen and repairers.

The income derived from scrap metal in some cases pays the fire insurance premium or is

enough to give the seller a nice summer vacation that he may not feel he can afford.

Save and market your scrap metal.

## Conservation and the Waste Paper Basket

ACCESSORY dealers and garagemen let many a good dollar of potential profits slip through their hands into the waste paper basket.

There are many leaks in the careless man's business, but the waste paper basket leak holds the palm as a gold-mine of waste.

Business knowledge is acquired through a combination of experience and accretion. The ideas and suggestions of others are indispensable, for no man is sufficient unto himself in his initiative and creative processes.

Manufacturers spend oodles of money in presenting business propositions to you through the mails. These firms have an interest in you, because when you make dollars for yourself you, as retail handlers of their goods, make fractions of dollars for them. They are usually wise spenders of money, and their letter or circular propositions sent to you are at least worthy of careful consideration.

Start a conservation campaign, friends, right now. Plug up the waste paper basket leak. Scan the stream of business proposals that pass over your desk and through your hands into the waste paper receptacle. The nuggets of gold you can thus gather will extend your merchandise line, increase the value of your service, reduce cost, increase profits, stimulate sales, make your advertising more effective—indeed, it is hard to set the limit or gauge the possibilities of the values that may thus be reclaimed and made to energize and strengthen your entire business structure and life.

Don't let the waste paper basket get anything that belongs right in the warp and woof of your business and service fabric. The highest-priced help you can use in the work of business-building comes to you through this channel—and it doesn't cost you a cent!

## Garage Overhead

**T**HE garage business is comparatively new and unorganized, and cost-finding is a comparatively new feature of the business. Some work along this line has been done, however, and such work should be extended until conclusions have been reached so definite and convincing that they may be generally accepted as true.

The chief factor in cost-finding is overhead. Without it the garageman, or a business man in any branch of trade, cannot be assured of operating at a profit; and one of the first essentials to cost-finding and profit-making is always to figure both cost and profits on the basis of sales, not on the purchase price of goods.

A number of enterprising manufacturing firms catering to the garage trade, as well as a number of garagemen having accountancy experience, among them the A. A. G. O. president, have made a survey which included both city and small town garages, some of them doing and some not doing an accessory and car sales business in connection with a storage and repair business, and it was found that the overhead under which their businesses are operating ranges from 9 to 13.5 per cent of the receipts. A business showing an overhead of less than 10 per cent was found to be exceptionally positioned or highly organized and remarkably efficient. A business working on a 13 or 13.5 per cent cost was in most instances found to be small and unorganized or large and extravagantly or carelessly operated.

The conclusion reached was that a fair average of overhead would be 11 per cent and that, until a more extended survey has been made and more convincing conclusions reached, the trade would be warranted in accepting 11 per cent as a standard for overhead that should be striven for by all who have not attained it and that any larger figure should be at once recognized as the symptom of a sick business needing instant efficiency treatment.

With 11 per cent as an ascertained and established overhead the garageman places himself in a position to make prices on merchandise and services intelligently and thus secure a living profit on each transaction and on the volume of business. In other words, an article selling for \$1 should not cost over 79 cents plus 11 cents overhead plus 10 cents net profit—and the 11 cents (11 per cent) overhead should always include interest on capital invested, wages for the owner of the business, depreciation, etc.

A universal knowledge of cost-finding and profit-figuring is the greatest and most natural of all antidotes for cut prices. It has well-nigh eliminated the cut-price evil in the printing trades, and it can be depended upon when applied to work out similar results in the garage field. The dan-

gerous and demoralizing competitor in any line of business is not the hustling, keen-visioned merchandiser; it is the man who doesn't know his costs.

## Saturation Point in the Auto Industry

**T**HE "saturation point" prophecy was premature, as applied to the auto industry but, like all such prophecies, it has stimulated an inquiry which has resulted in a clarification of views and proved to the skeptical or uninformed that the point of "saturation" is not within telescopic reach of the present, much less in naked-eye sight.

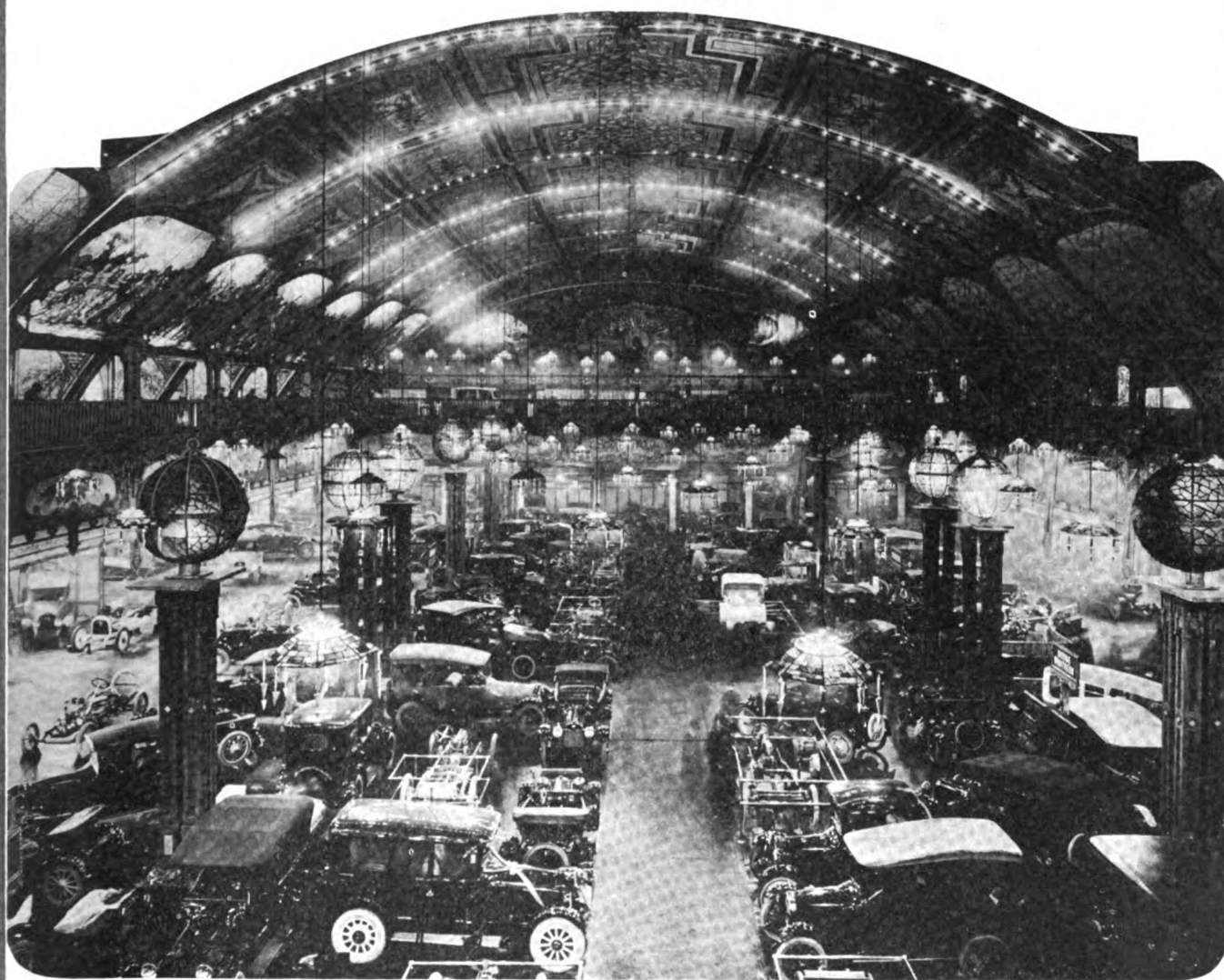
Let any dealer or garageman satisfy himself as to the true situation by making a list of the car owners in his own immediate territory, average them up as to earning power, then make another list of all other persons in the territory possessing equal earning power. When this is done, the dealer will not only possess an up-to-date car sales prospect list to work on but he will have a surveyor's chain with which to measure the distance from where he now stands to the dreaded "saturation" deadline to which the glib paragraphs so constantly and flippantly refer.

Four different AMERICAN GARAGE AND AUTO DEALER subscribers have already done this with a most pleasing outcome in point of clarified views and enlarged car sales volume. Two of the four found that persons on the carless list outnumbered those on the car owner list and the other two discovered that the number on the car owner list was slightly in excess of those on the carless list. The ratio in the first instance was 72 to 28 and 68 to 32 and in the latter instance 56 to 54 and 53 to 57.

These reports come from four different states—Massachusetts, Pennsylvania, Illinois and Kansas. The average from these figures would give a ratio of 42.25 car owners to 57.75 carless persons able to buy. A more extended survey might change this average somewhat, but it is doubtful if it would in any way alter the fact that the "saturation" stone wall is far in the distance and that there is plenty of leeway left to the most ambitious of dealers in which to ply his selling arts.

What does this mean? What is the difference between the 42 persons who own cars and the 58 who are able to own them but have not purchased? Simply this—they have not wanted cars strongly enough to buy or make the necessary arrangements to buy. The irresistible conclusion then is that all you, Mr. Dealer, have to do is to make them really want cars—want them strongly enough to buy—in order to multiply your sales.

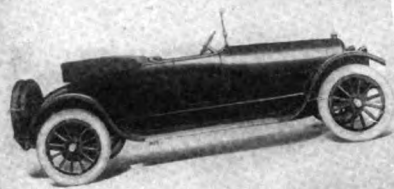
# *National* AUTOMOBILE SHOW *at Chicago*



The Premier Exhibition of Cars and Accessories



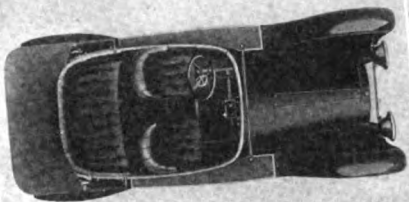
# Cars Exhibited at Chicago Show



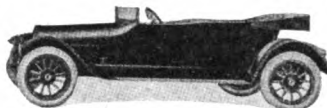
Apperson Bros. Automobile Co.  
Kokomo, Ind.  
Chummy Roadster Six, \$1750



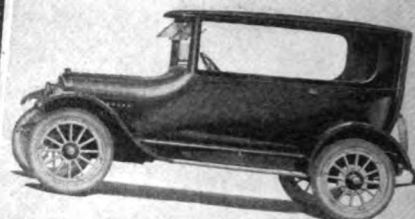
American Motors Corp.  
New York, N. Y.  
6-Pass. Touring, \$1285



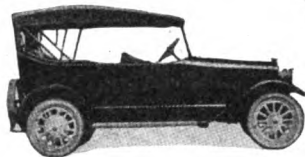
Auburn Automobile Co.  
Auburn, Ind.  
Auburn Light 6, 4-Pass Roadster,  
\$1535



Austin Automobile Co.  
Grand Rapids, Mich.  
Model 12, \$3750



Allen Motor Co.  
Fostoria, Ohio  
3-Pass. Convertible Sedan, \$1105



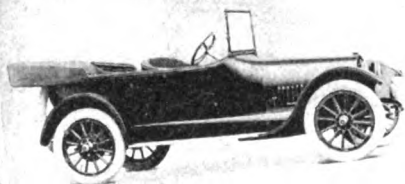
Abbott Corporation  
Detroit, Mich.  
5-Pass. Touring, \$1105



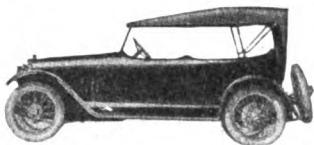
Briscoe Motor Corp.  
Jackson, Mich.  
5-Pass. Touring, \$685



Bour-Davis Motor Car Company  
Detroit, Mich.  
7-Pass. Touring, Wire Wheels,  
\$1350



Buick Motor Co.  
Pitts., Mich.  
Model D, 6, 5-Pass. Touring, \$1070



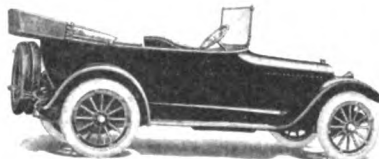
Ben-Hur Motor Co.  
Cleveland, Ohio  
5-Pass. Touring, \$1875



Cadillac Motor Car Co.  
Detroit, Mich.  
8-Cyl. 4-Pass. Phaeton, \$2205



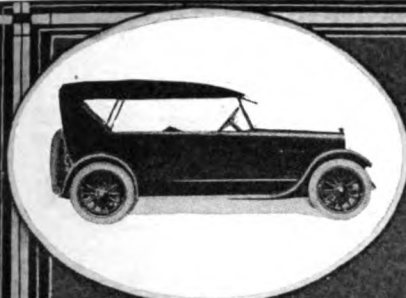
J. I. Case Threshing Machine Co.  
Racine, Wis.  
7-Pass. Touring, \$1100



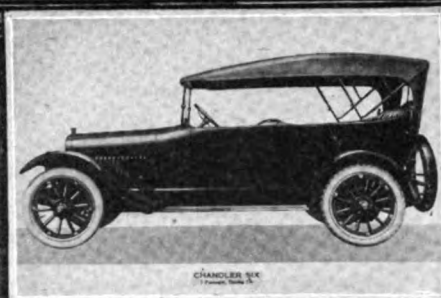
Chalmers Motor Co.  
Detroit, Mich.  
6-30 5-Pass., \$1250 after March 1



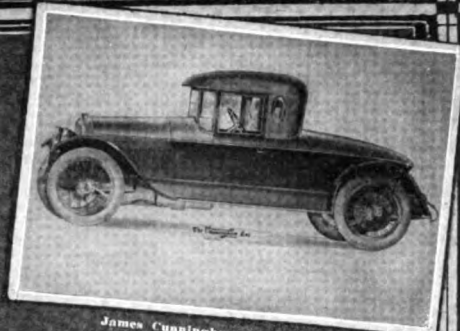
Harley Motor Car Co.  
Sfentor, Ill.  
Rouner, 7-Pass.



Columbia Motors Co.  
Detroit, Mich.  
5-Pass. Touring



Chandler Motor Car Co.  
Cleveland, Ohio  
7-Pass. Touring, \$1395



James Cunningham Son & Co.  
Rochester, N. Y.  
Cunningham Eight Coupe, \$3750



Cole Motor Car Co.  
Indianapolis, Ind.  
\$1695 Cole 8, Permanent Roofed  
Tuxedo Roadster, \$1740 Chicago



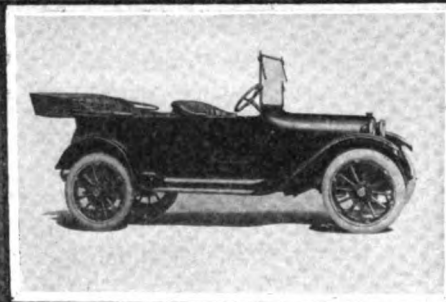
Classic Motor Co.  
Detroit, Mich.  
5-Pass. Touring, \$885



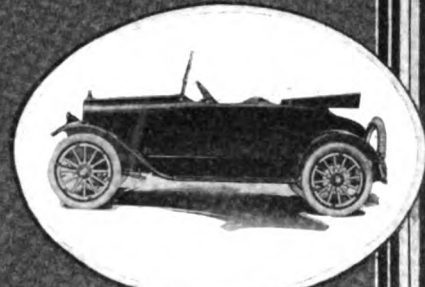
Crown-Elkhart Motor Co.  
Elkhart, Ind.  
Convertible Sedan



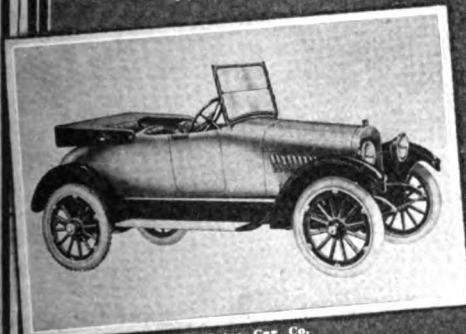
Chevrolet Motor Co. of Michigan  
Flint, Mich.  
4-90 Roadster, \$535



Dodge Bros.  
Detroit, Mich.  
5-Pass. Touring, \$785



Drexel Motor Car Corp.  
Chicago, Ill.  
4-Pass. Roadster, \$1650



Dixie Motor Car Co.  
Louisville, Ky.  
Dixie Flyer Roadster, \$845



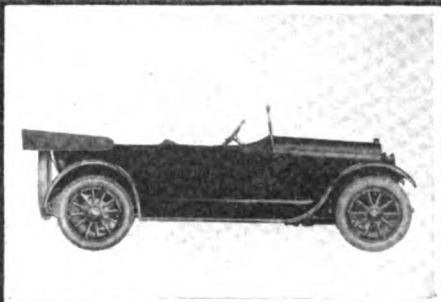
Dart Motor Car Co.  
Flint, Mich.  
Limousine



Geo. W. Davis Motor Car Co.  
Richmond, Ind.  
7-Pass. Springfield Sedan, \$1700



Emerson Motors Company,  
Kington, N. Y.  
Emerson Four, \$545



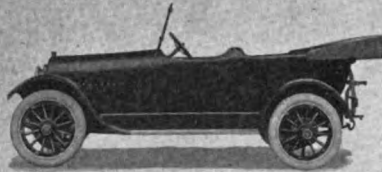
Elkhart Carriage & Mot. Car Co.  
Elkhart, Ind.  
Clear 5-Pass, \$845



Elgin Motor Car Corp.  
Chicago, Ill.  
Elgin 5-Pass. Six, \$895



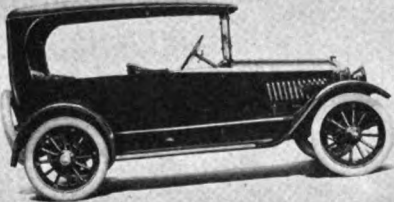
Franklin Automobile Co.  
Syracuse, N. Y.  
5-Pass. Touring, \$1050



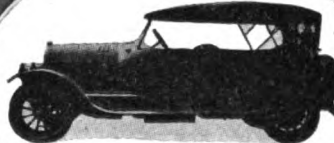
Empire Automobile Co.  
Indianapolis, Ind.  
6-Cyl. 5- or 7-Pass., \$1235



Enger Motor Car Co.  
Cincinnati, Ohio  
5-Pass. Touring, \$1285



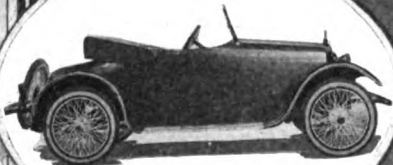
Grant Motor Car Corp.  
Cleveland, Ohio  
Six Cylinder Sedan,  
5-Pass., \$1000



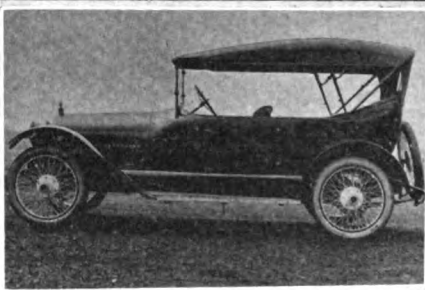
Flat Automobile Co.  
New York, N. Y.  
Flat Touring, \$3500



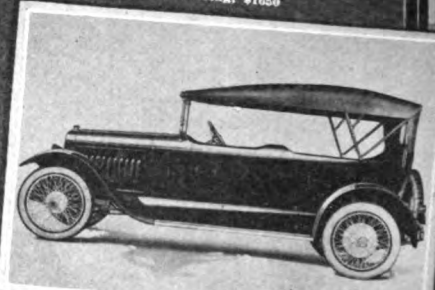
Hudson Motor Car Co.  
Detroit, Mich.  
7-Pass. Touring, \$1620



Hoar Motor Co.  
Indianapolis, Ind.  
Roadster



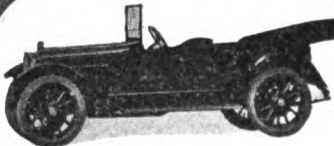
Haynes Automobile Co.  
Kokomo, Ind.  
Model 40, 5-Pass. Touring, \$2005



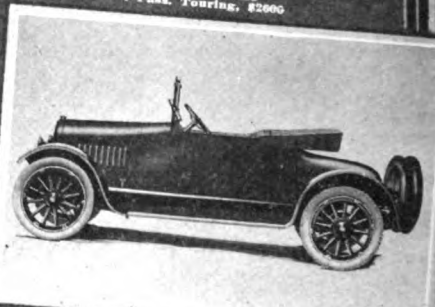
Hal Motor Car Co.  
Cleveland, Ohio  
7-Pass. Touring, \$2600



Inter-State Motor Co.  
Muncie, Ind.  
Standard Roadster, \$875



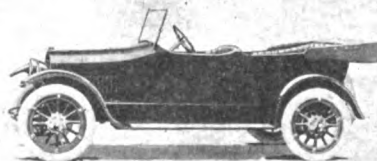
Hupp Motor Car Corp.  
Detroit, Mich.  
Hupmobile, \$1185



King Motor Car Co.  
Detroit, Mich.  
E. \$1400, 3-Pass. 8-Cyl. Roadster,  
\$1585



Jordan Motor Car Co.  
Cleveland, Ohio  
4-Pass. Sport Model, \$1750



Jackson Automobile Co.  
Jackson, Mich.  
Wolverine 5-Pass., \$1295

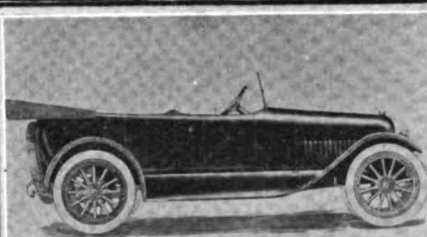


Harroun Motor Corp.  
Detroit, Mich.  
5-Pass. Touring, \$595





Kiesel Motor Car Co.  
Hartford, Wis.  
All-Year Sedan, \$1635



Kline Car Corporation  
Richmond, Virginia  
5-Pass. Touring, \$1295



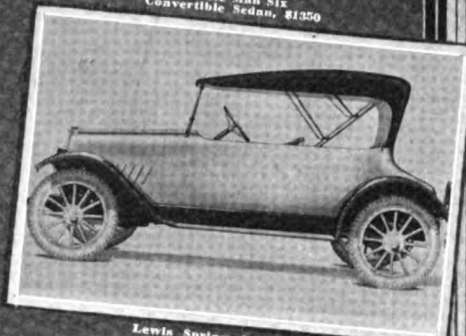
The Lexington-Howard Co.  
Connersville, Ind.  
Minute Man Six  
Convertible Sedan, \$1350



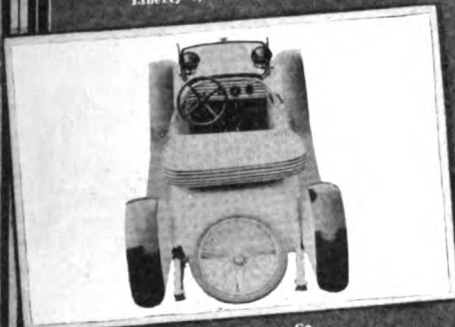
Liberty Motor Car Co.  
Detroit, Mich.  
Liberty 6, 5-Pass. Touring, \$1195



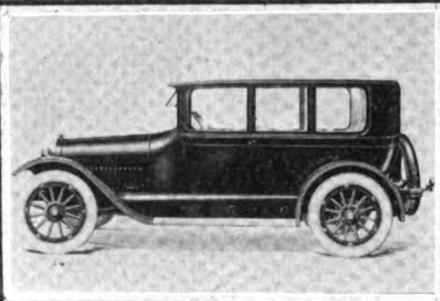
Losler Motor Car Co.  
Detroit, Mich.  
5-Pass. Touring, \$1085



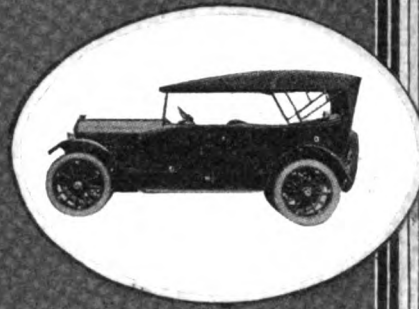
Lewis Spring & Axle Co.  
Chelton, Mich.  
Holler Eight



Minabohn Motors Co.  
Racine, Wis.  
Roadster



Mitchell Motors Co., Inc.  
Racine, Wis.  
Sedan, \$2175



Moline Automobile Co.  
East Moline, Ill.  
48-C, \$4450



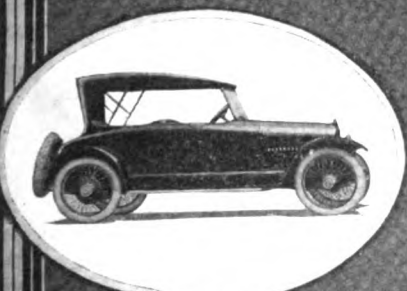
Mercer Automobile Co.  
Trenton, N. J.  
22-73 Sporting 4-Pass., \$3500



Maxwell Motor Co.  
Detroit, Mich.  
5-Pass. Touring, \$395



Metz Company  
Watcham, Mass.  
5-Pass. Touring, \$900



Mutual Motors Co.  
Jackson, Mich.  
4-60 Touring Roadster, \$1375

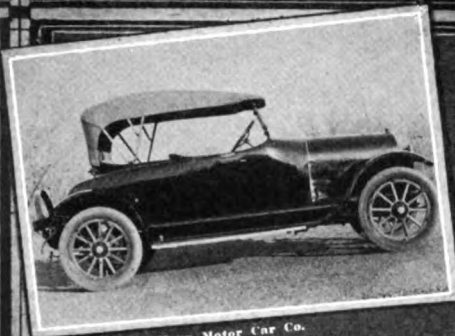


Milburn Wagon Co.  
Toledo, Ohio  
Milburn Light Electric



McFarlan Motor Co.  
Connersville, Ind.  
7-Pass. Touring, \$2300

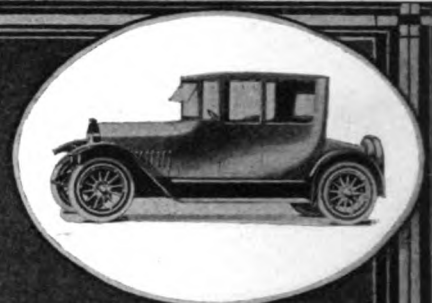




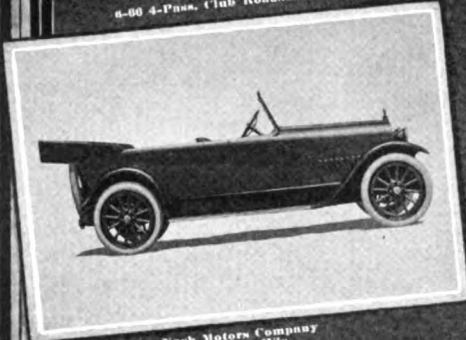
Moon Motor Car Co.  
St. Louis, Mo.  
4-00 4-Pass. Club Roadster, \$1000



Monroe Motor Company  
Pontiac, Mich.  
Club Roadster, \$995



National Motor Vehicle Co.  
Indianapolis, Ind.  
Highway 12-Cyl. Coupe, \$2800



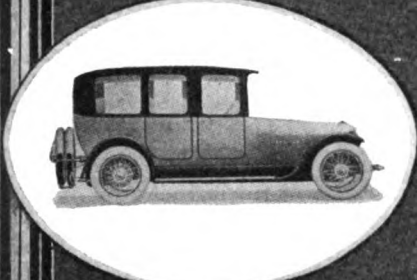
Nash Motors Company  
Kenosha, Wis.  
Jeffery Six, \$1465



Ohio Electric Car Co.  
Toledo, Ohio  
Ohio Electric, \$2380



Olds Motor Works  
Lansing, Mich.  
7-Pass. Oldsmobile, \$1367



The Pathfinder Co.  
Indianapolis, Ind.  
Pathfinder Touring Limousine,  
\$1250



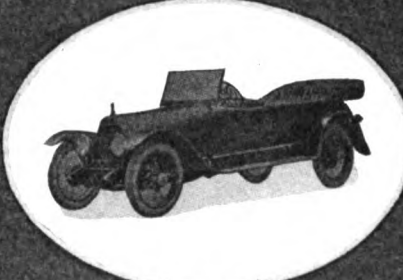
Oakland Motor Car Co. of  
Michigan  
Pontiac, Mich.  
Sensible Six, 7-Pass., \$1585



Paige-Detroit Motor Car Co.  
Detroit, Mich.  
7-Pass. Touring, \$1495



Peerless Motor Car Co.  
Cleveland, Ohio  
4-Pass. Roadster, \$1800



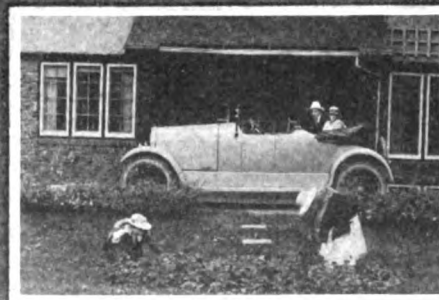
Owen Magnette Car Co.  
New York, N. Y.  
M-25, \$2300



Packard Motor Car Co.  
Detroit, Mich.  
2-35 7-Pass. Touring, \$3200



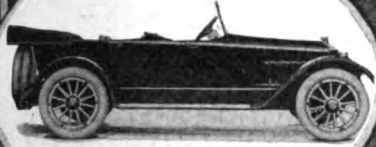
W. A. Paterson Co.  
Flint, Mich.  
4-Pass. Roadster, \$1195



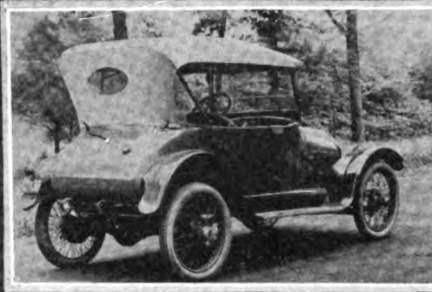
Nordyke & Marmon Co.  
Indianapolis, Ind.  
4-Pass. Club Roadster, \$2100



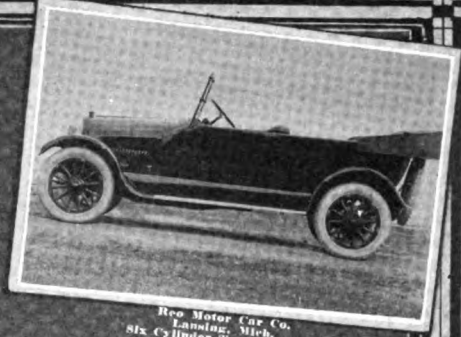
Pierce-Arrow Motor Car Co.  
Buffalo, N. Y.  
2-Pass. Touring, \$3500



Premier Motor Corp.  
Indianapolis, Ind.  
7-Pass. Touring, \$1805



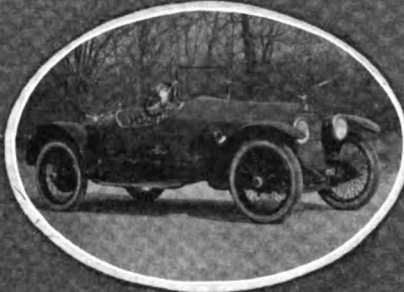
Willis-Overland Co.  
Toledo, Ohio  
Overland Country Club, \$770



Reo Motor Car Co.  
Lansing, Mich.  
Six Cylinder Touring, \$1250



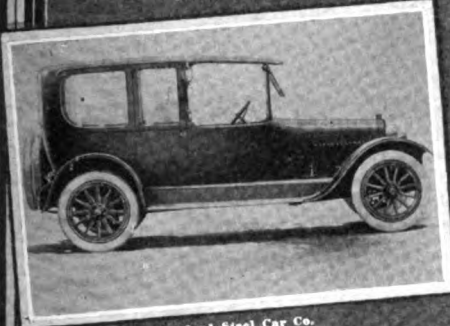
Pullman Motor Car Co.  
York, Penna.  
5-Pass. Touring, \$825



State Motor Car Co.  
Indianapolis, Ind.  
Roadster, Chicago, \$2400



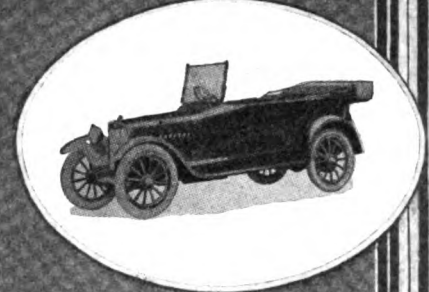
Regal Motor Car Co.  
Detroit, Mich.  
4-32 5-Pass., \$745



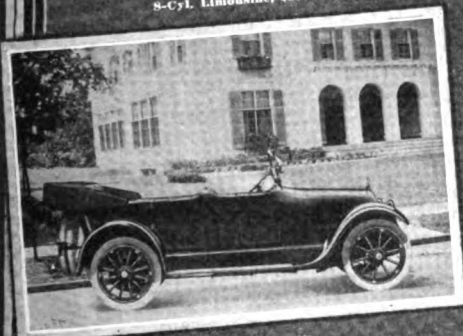
Standard Steel Car Co.  
Pittsburgh, Penna.  
8-Cyl. Limousine, \$3500



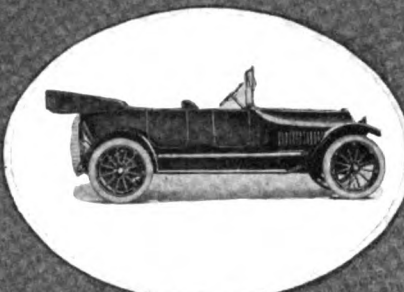
Princess Motor Car Corp.  
Detroit, Mich.  
Roadster, \$775



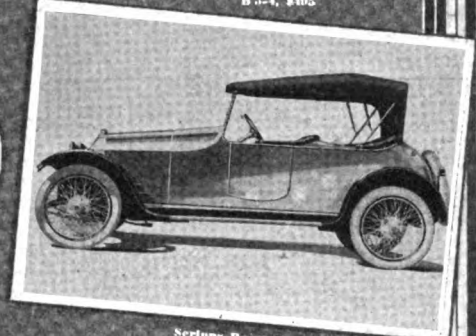
Saxon Motor Car Corp.  
Detroit, Mich.  
B 5-4, \$805



The H. F. Stearns Co.  
Cleveland, Ohio  
8-Cyl. Touring, \$2250



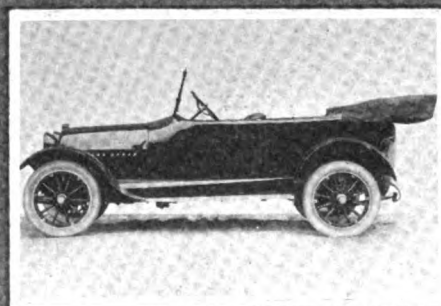
The Studebaker Corporation  
Detroit, Mich.  
7-Pass. Six, \$1180



Scripps-Booth Co.  
Detroit, Mich.  
4-Pass. Roadster



Stephens Motor Branch  
Moline, Ill.  
Stephens 6, 5-Pass. Roadster,  
\$1150



Velle Motor Vehicle Co.  
Moline, Ill.  
5-Pass. Touring, \$1125



Sun Motor Car Co.  
Elkhart, Ind.  
5-Pass. Light Six, \$1005

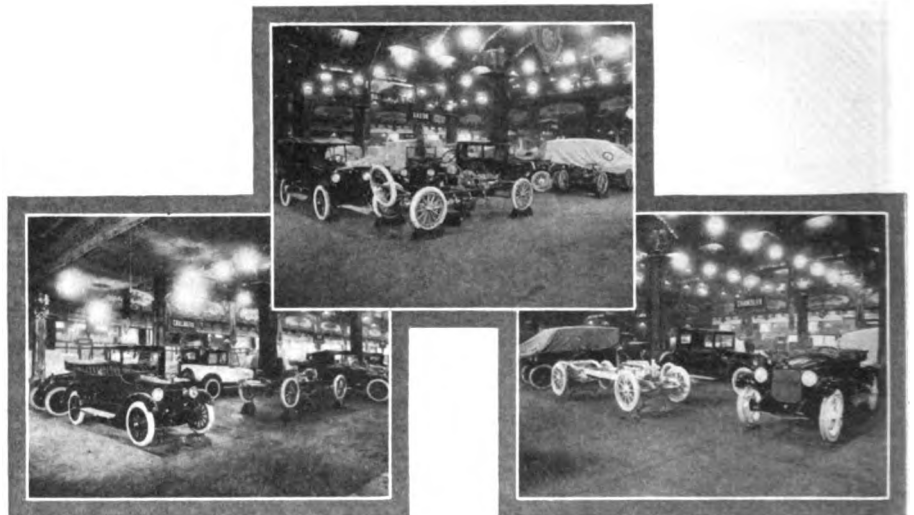


## The Chicago Show

And the Show itself; with its cathedral setting in the Coliseum and a consistent decorative scheme in the other buildings; with its display of all that is the last word in gasoline and electrical transportation; with its groupings of all the comforts and conveniences of automobiling classed as accessories; with the picked men of the automobile world, an imposing array of glad-handers and supersalesmen; with its out-of-town buyers who nonchalantly ordered automobiles by the train-load and accessories by the car-load; with its eager, jostling, 400,000 total, horde of sight-seers and prospective buyers.

Down to the minutest detail it was the best Show Chicago has seen. It ran neck-and-neck with the New York Show in point of attendance and distanced it in point of sales. And it ran distinctly behind the New York Show in floor space. Originally

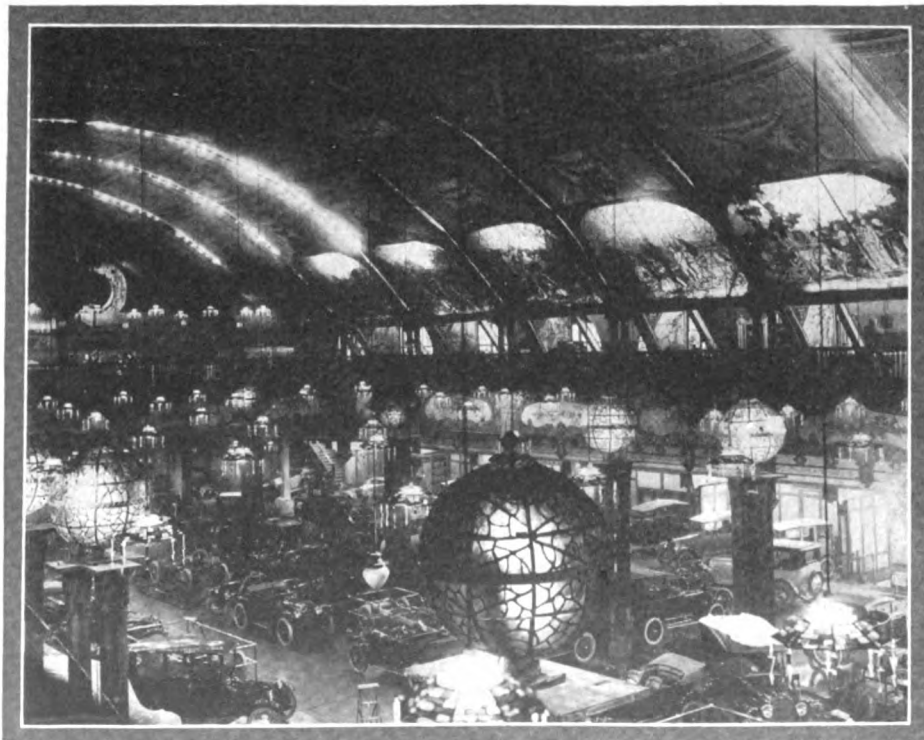
## Three Coliseum Booths



CHALMERS

SAXON

CHANDLER

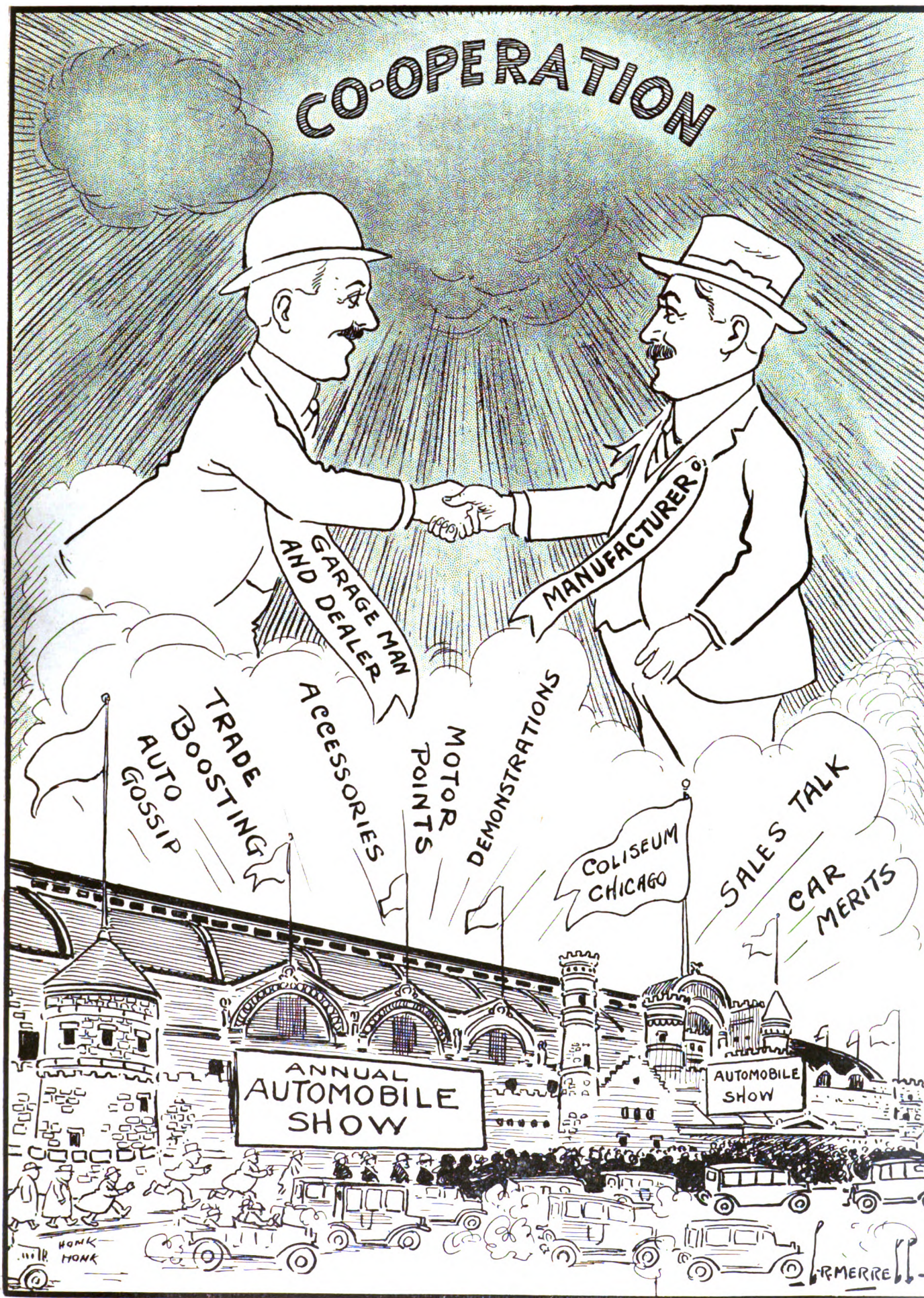


SHOWING THE CATHEDRAL SETTING.

the Coliseum was large enough. Then the Coliseum Annex was added. In following years the large armory was taken on and finally the Greer building. And General Manager Miles sold every foot of space in all the above and then was compelled to refuse space to over 200 applicants. Late-comers, and those who could not get the choice locations, staged outside exhibits until they equaled in number those in the Show itself. From end to end of Automobile Row, on all the side streets and in every hotel lobby one or more cars and accessories were on view. The picture houses put on automovies; vaudeville stars revamped their jokes with an automobile environment and the town sat worshipfully at the wheels of the gas buggy.

It was automobile week for Chicago, the Middle States, the West and a good share of the East. And it crowded the exposition buildings until automobiles and accessories oozed out of every pore. The exhibits were adequate and the room was all too small. Next year, to compete on even terms with the New York Show, it may be necessary to roof over Grant Park for an exhibition building.







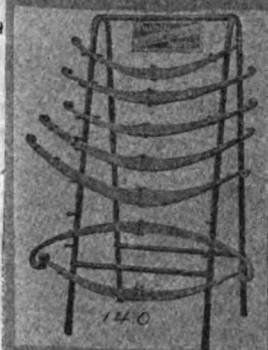
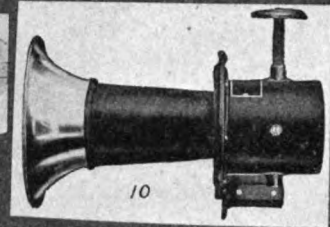
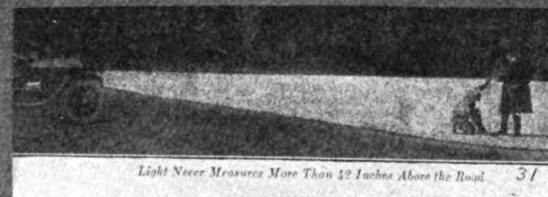
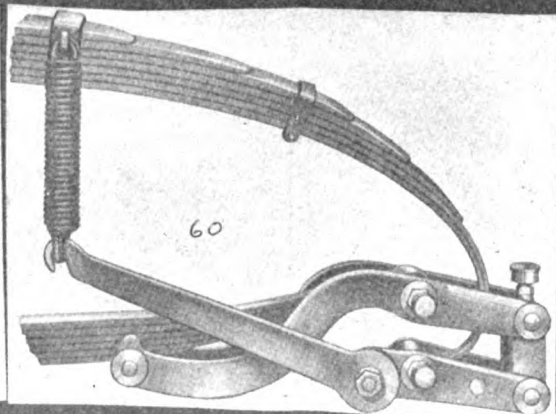
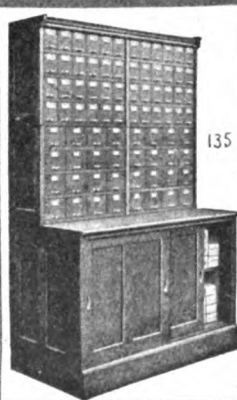
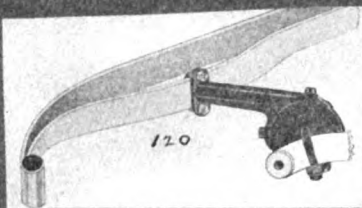
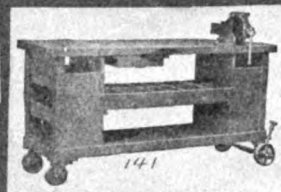
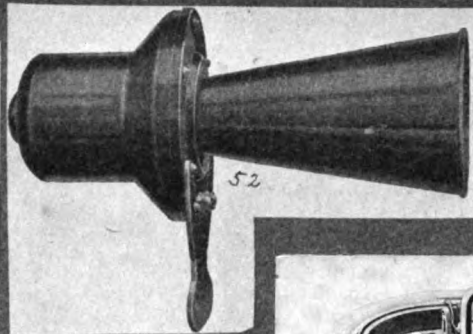
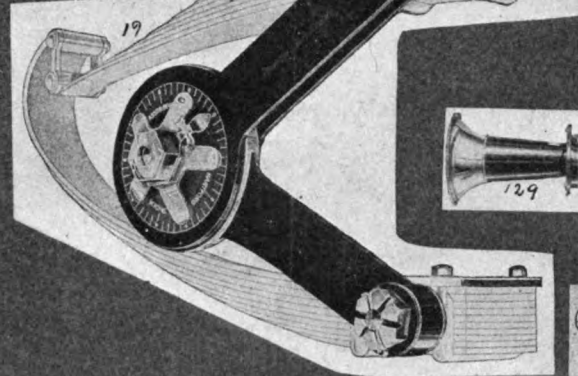
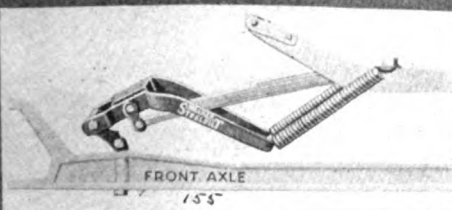
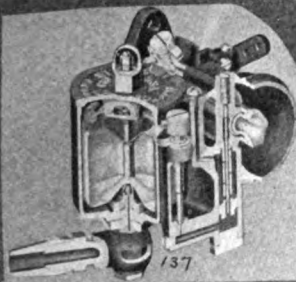
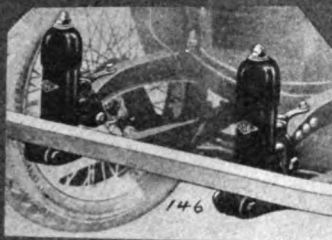
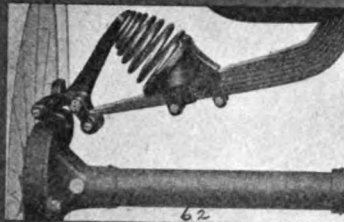
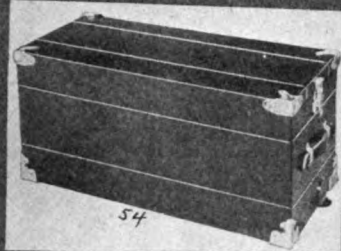
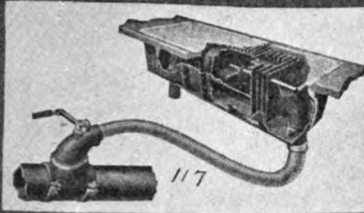
# Accessories Exhibitors at the Show.

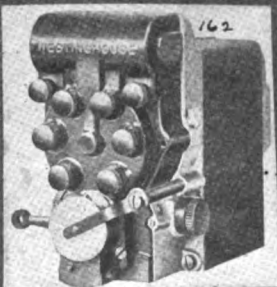
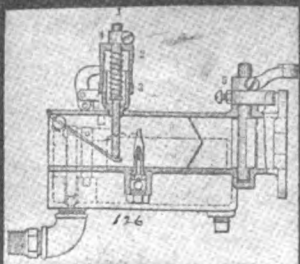
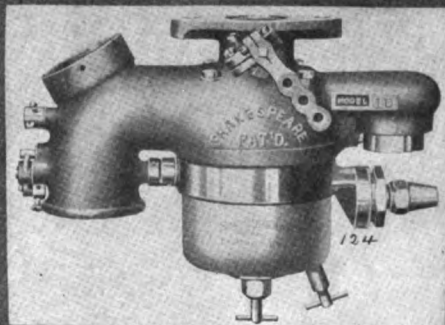
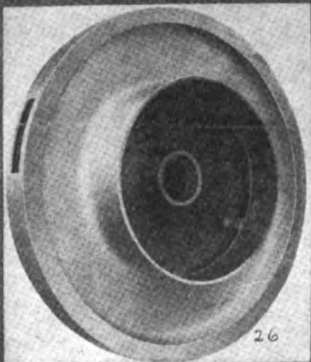
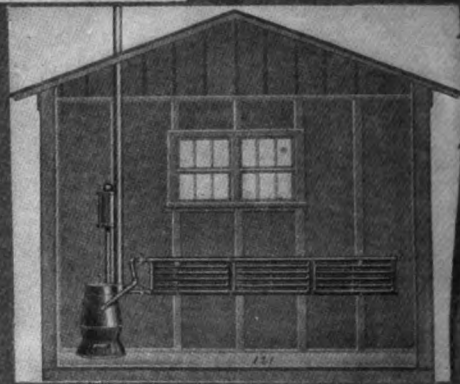
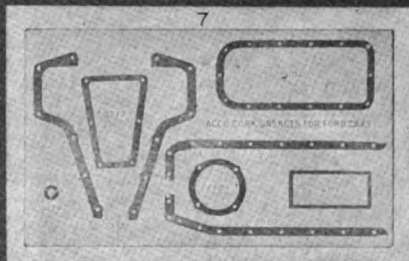
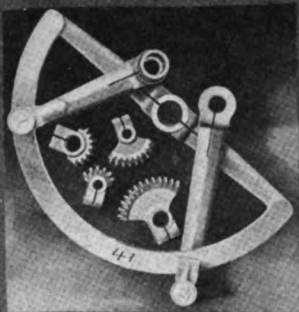
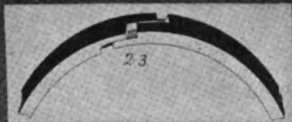
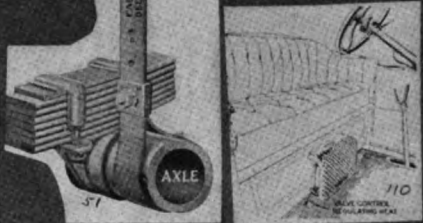
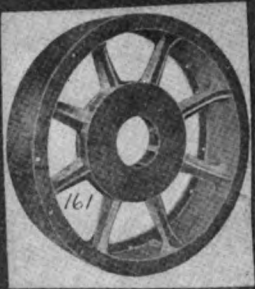
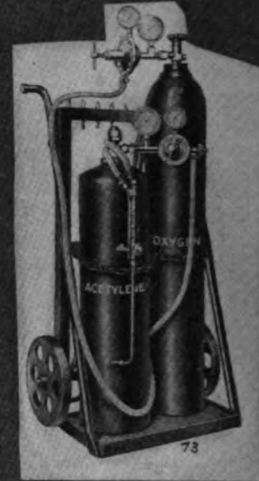
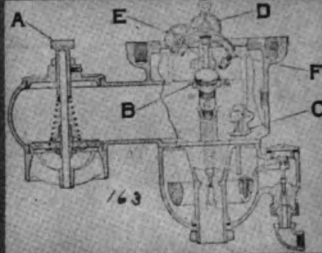
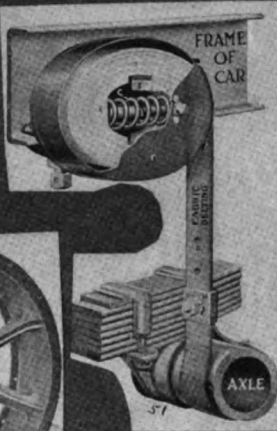
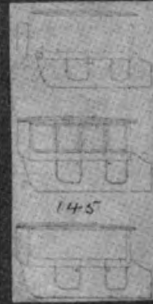
- 1 A-B-C Starter Co., Detroit, Mich.
- 3 American Bronze Co., Berwyn, Pa.
- 4 American Bureau of Engineering, Inc., Chicago.
- 7 Armstrong Cork Co., Pittsburgh, Pa.
- 8 Auto Compressor Co., Wilmington, Ohio.
- 9 Auto Gear and Parts Co., Chicago.
- 10 Automobile Supply Mfg. Co., Brooklyn, N. Y.
- 11 Badger Brass Mfg. Co., Kenosha, Wis.
- 12 Bay State Pump Co., Boston, Mass.
- 13 Becker Bros., Inc., Chicago.
- 16 Brown-Lipe Gear Co., Syracuse, N. Y.
- 19 Buda Co., Harvey, Ill.
- 20 Byrne, Kingston Co., Kokomo, Ind.
- 23 Chalsmith Co., Chicago.
- 24 Champion Ignition Co., Flint, Mich.
- 26 Clark Equipment Co., Buchanan, Mich.
- 28 Continental Motors Co., Detroit, Mich.
- 29 Corbin Screw Co., New Britain, Conn.
- 30 Corcoran-Victor Co., Cincinnati, Ohio.
- 31 Corning Glass Works, Corning, N. Y.
- 33 Craftsmen Motor Corp., Chicago.
- 34 Wm. Cramp & Sons Ship & Engine Bldg. Co., Philadelphia, Pa.
- 35 Curtis Pneumatic Machinery Co., St. Louis, Mo.
- 36 Dauu Products Co., Cleveland, O.
- 37 Detroit Battery Co., Detroit, Mich.
- 39 Disco Electric Starter Corp., Detroit, Mich.
- 40 Joseph Dixon Crucible Co., Jersey City, N. J.
- 41 Doehler Die Casting Co., Brooklyn, N. Y.
- 43 E. A. Laboratories, Inc., Brooklyn, N. Y.
- 45 Edison Storage Battery Co., Orange, N. J.
- 46 Electric Storage Battery Co., Philadelphia, Pa.
- 47 Eureka Rim Compressor, Inc., Addison, N. Y.
- 48 Ferro Machine & Foundry Co., Cleveland, Ohio.
- 49 Findeisen & Kropf Mfg. Co., Chicago.
- 50 Fulton Co., Knoxville, Tenn.
- 51 Gabriel Mfg. Co., Cleveland, Ohio.
- 52 Garford Mfg. Co., Elyria, Ohio.
- 53 Gemco Mfg. Co., Milwaukee, Wis.
- 54 Globe Machine & Stamping Co., Cleveland, Ohio.
- 56 Gould Storage Battery Co., New York City.
- 57 Gray & Davis, Boston, Mass.
- 58 H. & D. Co., Goodland, Ind.
- 60 L. P. Halladay Co., Streator, Ill.
- 61 Edward V. Hartford, Inc., Jersey City, N. J.
- 62 Robert H. Hassler, Indianapolis, Ind.
- 64 Hayes Wheel Co., Jackson, Mich.
- 65 Heinze, John O. Co., Springfield, Ohio.
- 66 Heinze Electric Co., Lowell, Mass.
- 71 Howell, W. H., Co., Geneva, Ill.
- 72 Humboldt Machine & Stamping Co., Long Island City, N. Y.
- 73 Imperial Brass Mfg. Co., Chicago.

On the following pages are more accessories than were ever before shown in a single edition of any paper.

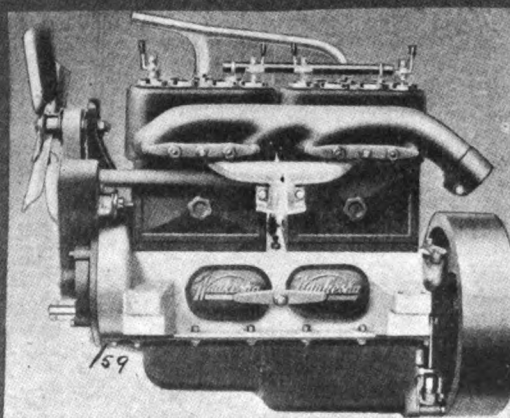
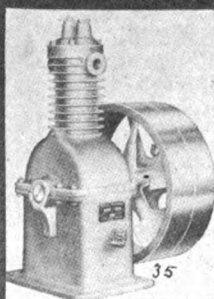
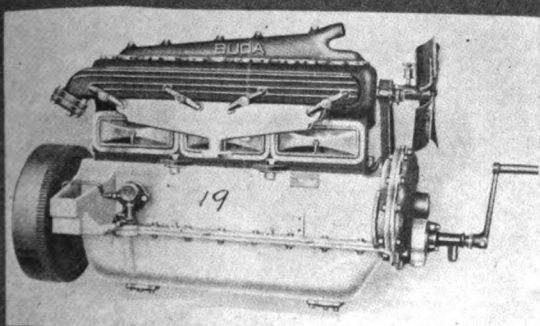
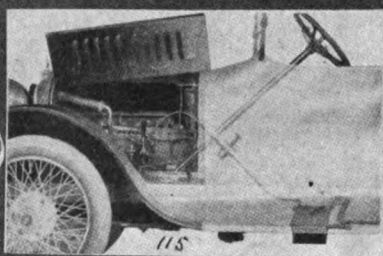
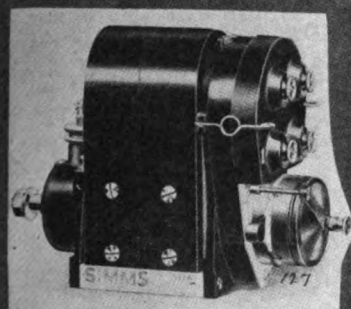
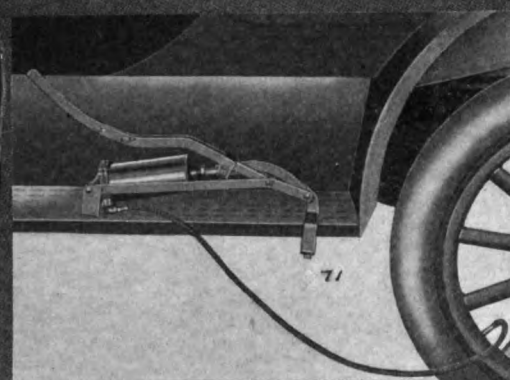
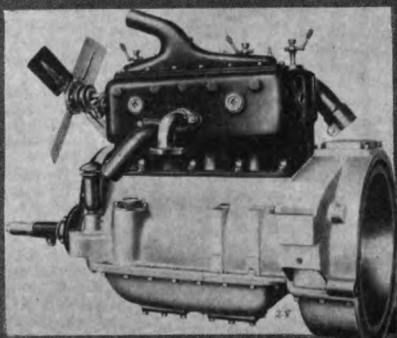
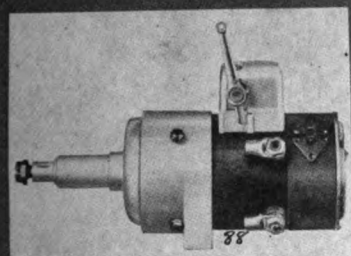
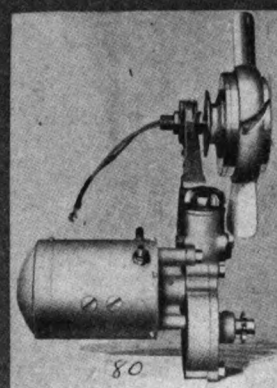
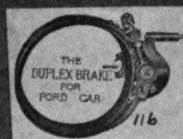
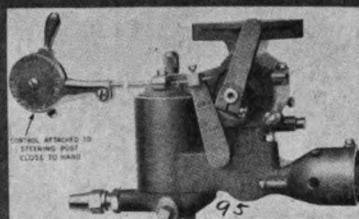
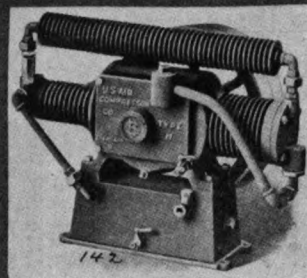
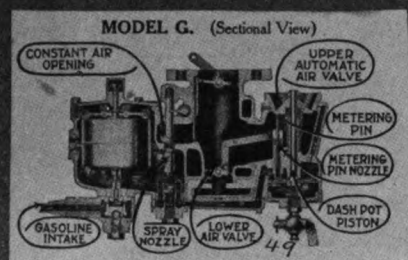
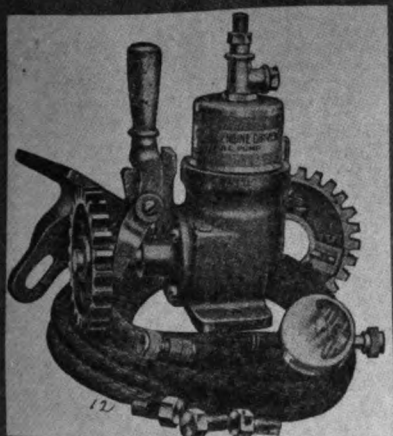
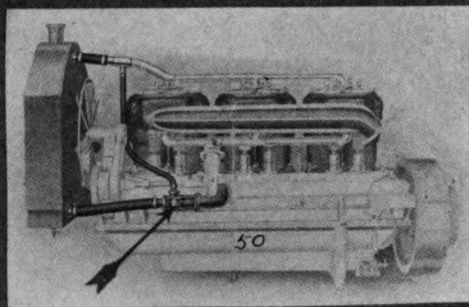
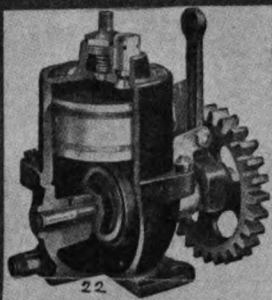
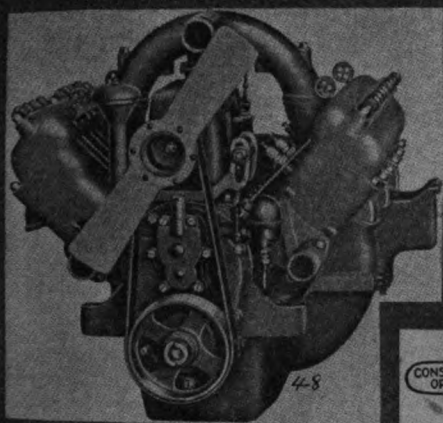
The numbers on the illustrations refer to numbers opposite the names of manufacturers on this page.

- 74 Improved Gauge Mfg. Co., Syracuse, N. Y.
- 75 Inland Machine Works, St. Louis, Mo.
- 78 K-W Ignition Co., Cleveland, Ohio.
- 79 Kellogg Mfg. Co., Rochester, N. Y.
- 80 Kemco Electric Mfg. Co., Cleveland, Ohio.
- 81 Atwater Kent Mfg. Works, Philadelphia, Pa.
- 82 Klaxon Co., Newark, N. J.
- 83 Kokomo Electric Co., Kokomo, Ind.
- 85 Lane Bros. Co., Poughkeepsie, N. Y.
- 86 Lawrence, L. & Co., Newark, N. J.
- 87 Leather Tire Goods Co., Niagara Falls, N. Y.
- 88 Leece-Neville Co., Cleveland, Ohio.
- 89 Lipman Air Appliance Co., Beloit, Wis.
- 90 Lumen Bearing Co., Buffalo, N. Y.
- 92 McQuay-Norris Mfg. Co., St. Louis, Mo.
- 93 F. W. Mann Co., Milford, Conn.
- 94 Marvel Accessories Mfg. Co., Cleveland, Ohio.
- 95 Master Carburetor Corp., Detroit, Mich.
- 96 Master Spark Co., Chicago.
- 97 Metal Stamping Co., Long Island City, N. Y.
- 98 A. R. Mosler & Co., Mt. Vernon, N. Y.
- 99 Moto-Meter Co., Inc., Long Island City, N. Y.
- 102 New Era Spring & Specialty Co., Detroit, Mich.
- 103 New York Coil Co., New York City.
- 104 North East Electric Co., Rochester, N. Y.
- 105 Oakes Co., Indianapolis, Ind.
- 106 Otis Elevator Co., New York City.
- 107 Pantasote Co., New York City.
- 108 Parker Rust Proof Co. of America, Detroit, Mich.
- 109 Parry Mfg. Co., Indianapolis, Ind.
- 110 Perfection Spring Service Co., Cleveland, Ohio.
- 111 A. J. Picard & Co., Inc., New York City.
- 112 G. Piel & Co., Long Island City, N. Y.
- 113 Pouvaillsmith Corp., Poughkeepsie, N. Y.
- 114 Wm. E. Pratt Mfg. Co., Chicago.
- 115 Prest-O-Lite Co., Indianapolis, Ind.
- 116 Raybestos Co., Bridgeport, Conn.
- 117 Reliable Auto-Heater Co., Cleveland, Ohio.
- 118 Remy Electric Co., Anderson, Ind.
- 119 Rubber Insulated Metals Corp., Plainfield, N. J.
- 120 J. H. Sager Co., Rochester, N. Y.
- 121 W. A. Schleit Mfg. Co., Inc., Syracuse, N. Y.
- 122 E. Schrader's Son, Inc., Brooklyn, N. Y.
- 123 E. E. Schwarzkopf, Detroit, Mich.
- 124 Shakespeare Co., Kalamazoo, Mich.
- 125 C. A. Shaler Co., Waupun, Wis.
- 126 Simmons Metal Goods Co., Detroit, Mich.
- 127 Simms Magneto Co., East Orange, N. J.
- 128 Smith Wheel, Inc., Syracuse, N. Y.
- 129 Sparks-Withington Co., Jackson, Mich.
- 130 Splittorf Electrical Co., Newark, N. J.
- 131 Spray Primer Co., Boston, Mass.
- 132 Springfield Body Co., Springfield, Mass.
- 133 Standard Parts Co., Cleveland, Ohio.
- 134 Sternberg & Co., Chicago.
- 135 Stevens & Co., New York City.
- 136 Stewart-Warner Speedometer Corp., Chicago.
- 137 Stromberg Motor Devices Co., Chicago.
- 138 Tobey Polish Co., Chicago.
- 139 Triple Action Spring Co., Chicago.
- 140 Tuthill Spring Co., Chicago.
- 141 United Engine & Mfg. Co., Hanover, Pa.
- 142 United States Air Compressor Co., Cleveland, Ohio.
- 143 United States Gauge Co., New York City.
- 144 U. S. Light & Heat Corp., Niagara Falls, N. Y.
- 145 Universal Motor Products Co., Indianapolis, Ind.
- 146 Universal Shock Eliminator, Inc., New York City.
- 147 Vacuum Oil Co., New York City.
- 148 Van Cleef Bros., Chicago.
- 149 Van Sicklen Co., Elgin, Ill.
- 150 Veeder Mfg. Co., Hartford, Conn.
- 151 Vesta Accumulator Co., Chicago.
- 152 Voorhees Rubber Mfg. Co., Jersey City, N. J.
- 153 Wagner-Hoyt Electric Co., New York City.
- 154 Wales-Adams Co., Chicago.
- 155 Walker Mfg. Co., Racine, Wis.
- 156 Waltham Watch Co., Waltham, Mass.
- 157 Warner Gear Co., Muncie, Ind.
- 158 Water Gas Carburetor Co., Kansas City, Mo.
- 159 Waukesha Motor Co., Waukesha, Wis.
- 160 Weaver Mfg. Co., Springfield, Ill.
- 161 West Steel Casting Co., Cleveland, Ohio.
- 162 Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.
- 163 Wheeler-Schebler Carburetor Co., Indianapolis, Ind.
- 164 Willard Storage Battery Co., Cleveland, Ohio.
- 165 Wilson & Co., Chicago.
- 166 "X" Laboratories, Boston, Mass.

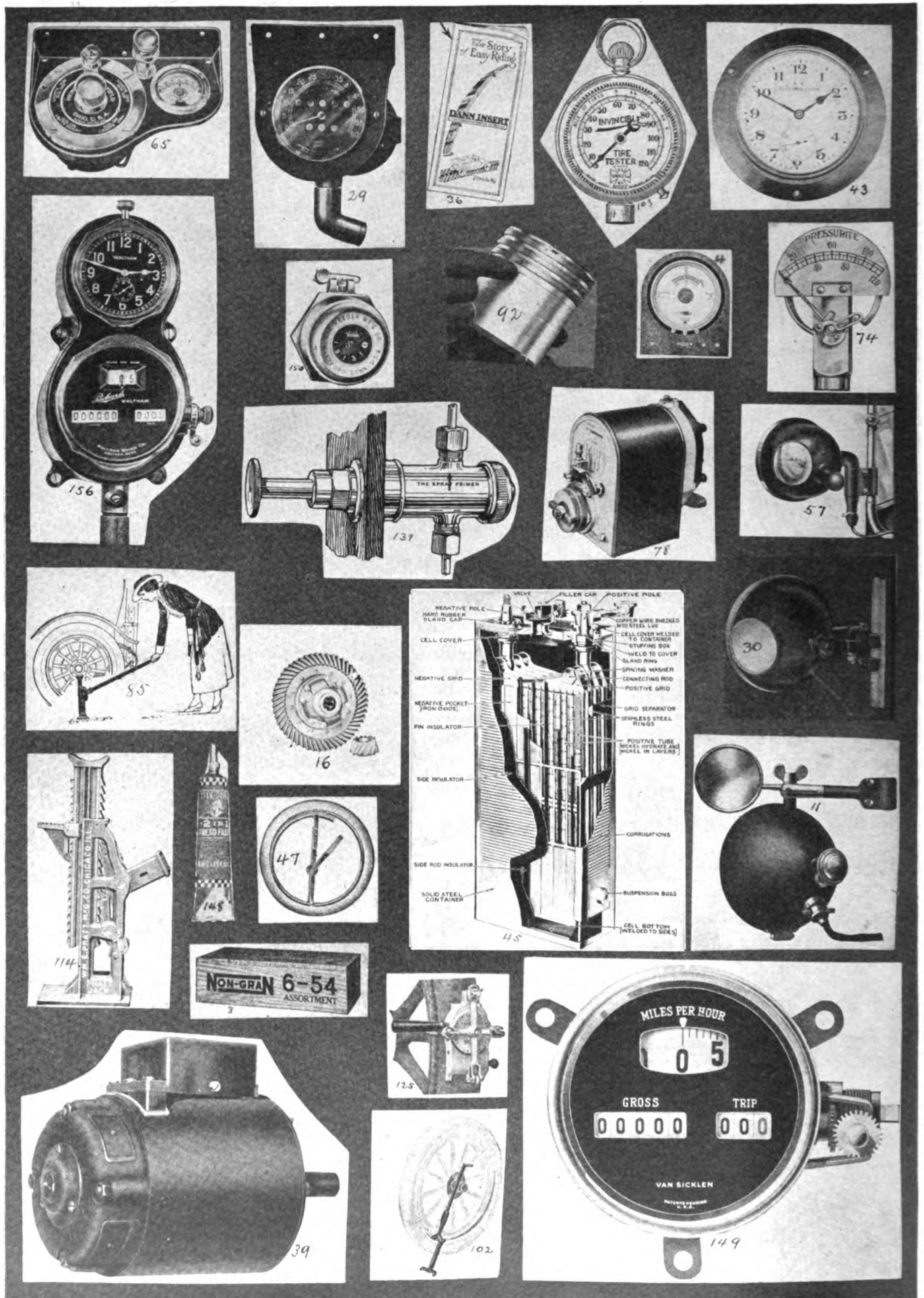


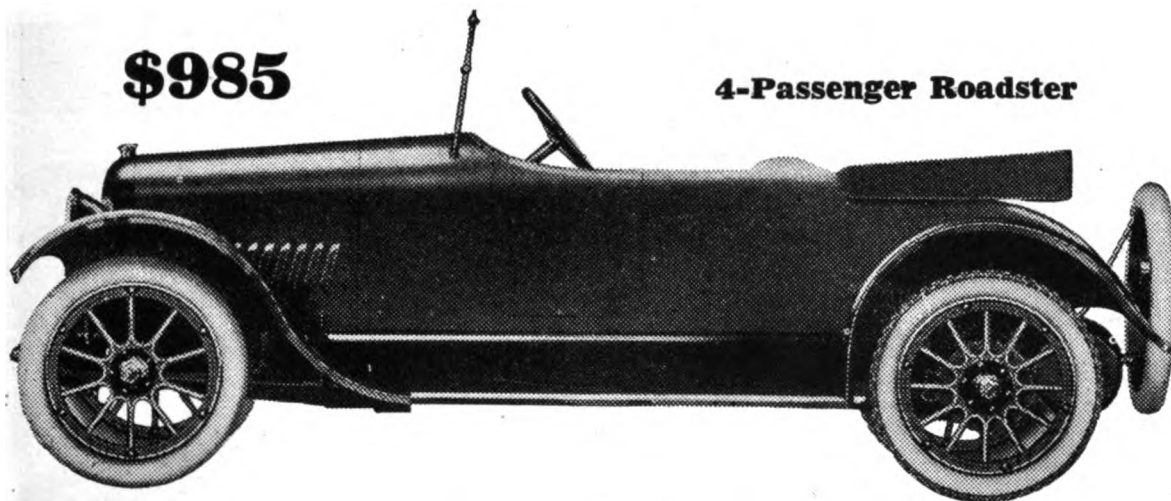












**"The Car of the Hour"**

5-Passenger Touring

**\$985**

**Elgin Six**

4-Passenger Roadster

**\$985**

**DEALERS:**

**Measure the Elgin Six Against \$985**

Your verdict will be: "Under-priced by several hundred dollars."

—Yet we are making a legitimate profit.

Note the style, size and specifications that will enable you successfully to compete with high-priced cars in quality—and beat them in price.

Consider the Elgin velvet-acting clutch, that eliminates gear-shifting and enables this "Beauty of the Road" to be started on "high" under ordinary conditions, thus removing the last obstacle to the successful handling of a motor car by women.

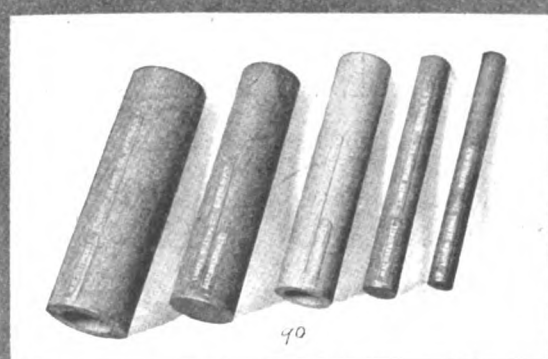
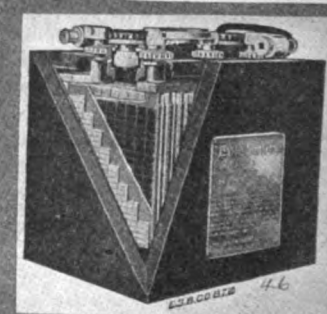
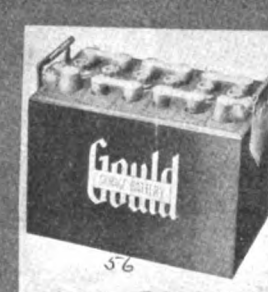
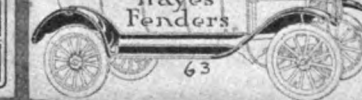
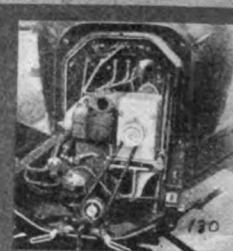
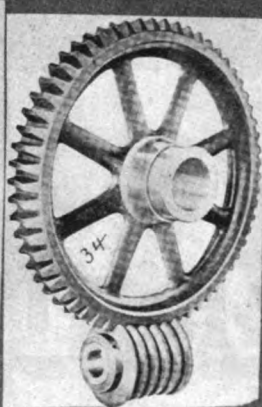
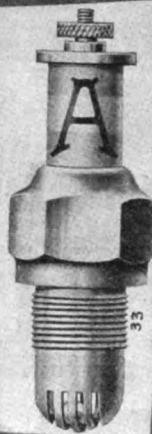
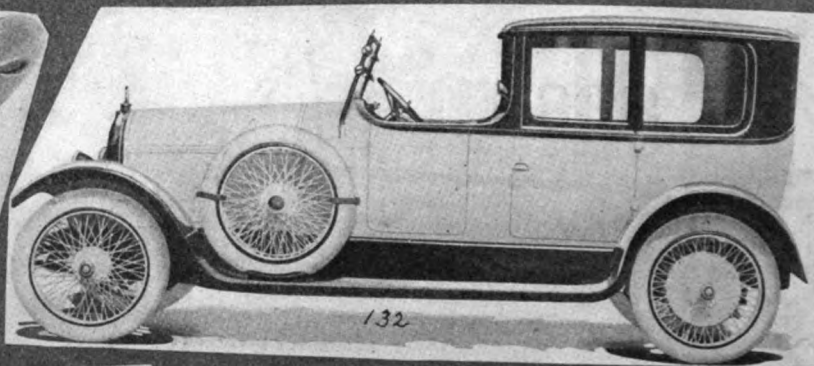
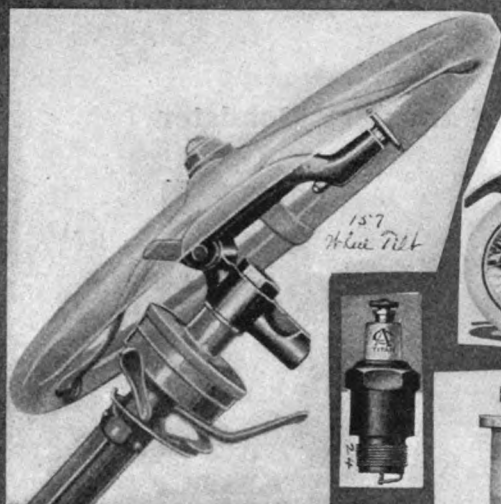
Note the improved cantilever rear spring suspension, found only on the Elgin Six, that has set a new standard of motoring ease and comfort at high speed. You can safely and comfortably drive the Elgin Six at 35 to 50 miles per hour over roads so rough that the average car is limited to 15 to 25 miles per hour.

And as for style and beauty—no other car selling under \$1250 has the fashionable center cowl of the high-priced European models. The beautiful yacht line design of the Elgin Six was established by a famous artist, and gives this car a distinction that sets it aside from the monotony of the common designs of average cars.

**NOTE:** The Elgin Six, in addition to establishing a new record of 67½ hours between Chicago and Miami, Fla., has made perfect scores and won highest economy honors in some of the most gruelling endurance and economy runs of the past year.

**SPECIAL NOTICE.** Our recently completed, big, modern, daylight Plant No. 2, has so increased our production that we are now entering new territory. If the Elgin Six is not now sold in your territory, better wire us for application blank and full particulars of 1917's best money making proposition for dealers.

**Elgin Motor Car Corporation, Chicago, U. S. A.**





# A Big Profitable Field for DEALERS

\$\$\$

A Money-Maker Every Month of the Year—



FARM



EXPRESS



OIL DEALERS



FURNITURE



CONTRACTOR



HARDWARE



LUMBER

THERE are more live prospects for the Ford-Dearborn One-Ton Truck than for any other commercial car on the market. Grocers, farmers, contractors, lumbermen, expressmen, manufacturers, truck gardeners and scores of others are *real* prospects for the Ford-Dearborn.

You can sell the Ford-Dearborn to people who would not think of paying \$1,500 for a truck (the price of the average one-ton truck). The Ford-Dearborn is actually far cheaper to operate than horse and wagon and many times more satisfactory and efficient.

The Ford-Dearborn Truck is a combination of the Ford chassis and the Dearborn Unit. It has all the economy, simplicity and efficiency of the Ford—and the strength of the Dearborn.

**\$350 and a Ford, New or Old, Makes a**

**FORD-DEARBORN**  
One Ton Truck

90 per cent of the load is carried on the sturdy rear axle and heavy truck wheels. Full 9-foot loading space; any style body can be furnished. Wheels are of heavy artillery type with guaranteed hickory spokes and felloes; tires are solid rubber. Tread is standard (56 inches) same as Ford front wheels. Baldwin roller chains and Baldwin steel sprocket.

The Dearborn Unit is made complete in our own factory and is completely guaranteed in every detail. There is no other attachment like it. Any auto mechanic can attach it to Ford chassis in a few hours time.

Find out about the DEARBORN today. Write or wire for our Dealer's Proposition with complete information on the Dearborn Unit.

**Dearborn Truck Company**  
1228-64 S. Campbell Ave. Chicago

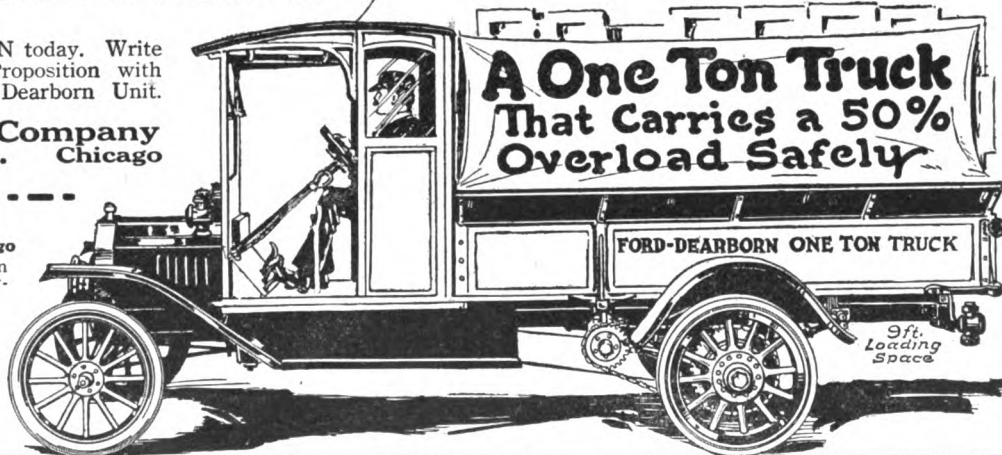
---COUPON---

Dearborn Truck Co.,  
1228-64 S. Campbell Ave., Chicago

Send me your Dealer's Proposition and complete information on Dearborn Truck Unit.

Name.....

Address.....







From left to right: W. R. MELCHER, service expert with C. A. Shaler Co.; FRANK H. SMITH, live-wire Hal Motor Car Co. retailer at Cleveland; CLAUDE H. NANKWELL, who sells Pathfinder cars in Russia; R. E. HILTON, retail sales manager, Detroit Branch, Studebaker Corporation; H. S. FIRESTONE, president Firestone Tire and Rubber Co. and model employer.

### On Chicago's Row.

J. H. McDuffie, one of Chicago's early motorists and founder of the McDuffie Automobile Company, has returned to Chicago from Detroit, and is the manager of the big Overland (Overland Motor Company) agency in this city, succeeding Charles W. Price, who resigned and disposed of his holdings on account of ill health. Mr. Price will take a much-needed rest before re-entering business.

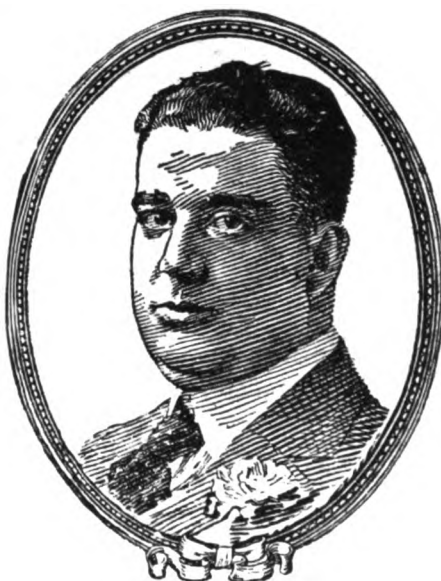
W. G. Tennant is much pleased with the new quarters which have been assigned and made ready for the Tennant-Oakland Company at 2426-2428 Michigan avenue, Chicago. The new establishment has 37,800 feet of square space and contains showroom, office, parts room, and repair shop. The housewarming is being followed by a record business.

### In New Mexico.

G. A. Allison, of the Butler Automobile Company, Albuquerque, has been doing some very effective work in behalf of lien law legislation in New Mexico. Procuring a copy of the New Jersey lien law from A. A. G. O. headquarters, he secured the active assistance of Senator Barth, who

introduced the bill and is leading the fight in its behalf. The press of New Mexico has commented favorably upon the meas-

within the next few weeks. Every garageman in New Mexico should urge his senator and representative to support the bill as a measure of justice to a worthy craft.



HARRY NEWMAN, Chicago,  
One of the foremost automobile merchants  
in the world, recommends Hal 12.  
Sketched by Charles Daniel Frey.

among the garagemen of the state are exceedingly hopeful that it will become a law and Mr. Allison and his co-workers

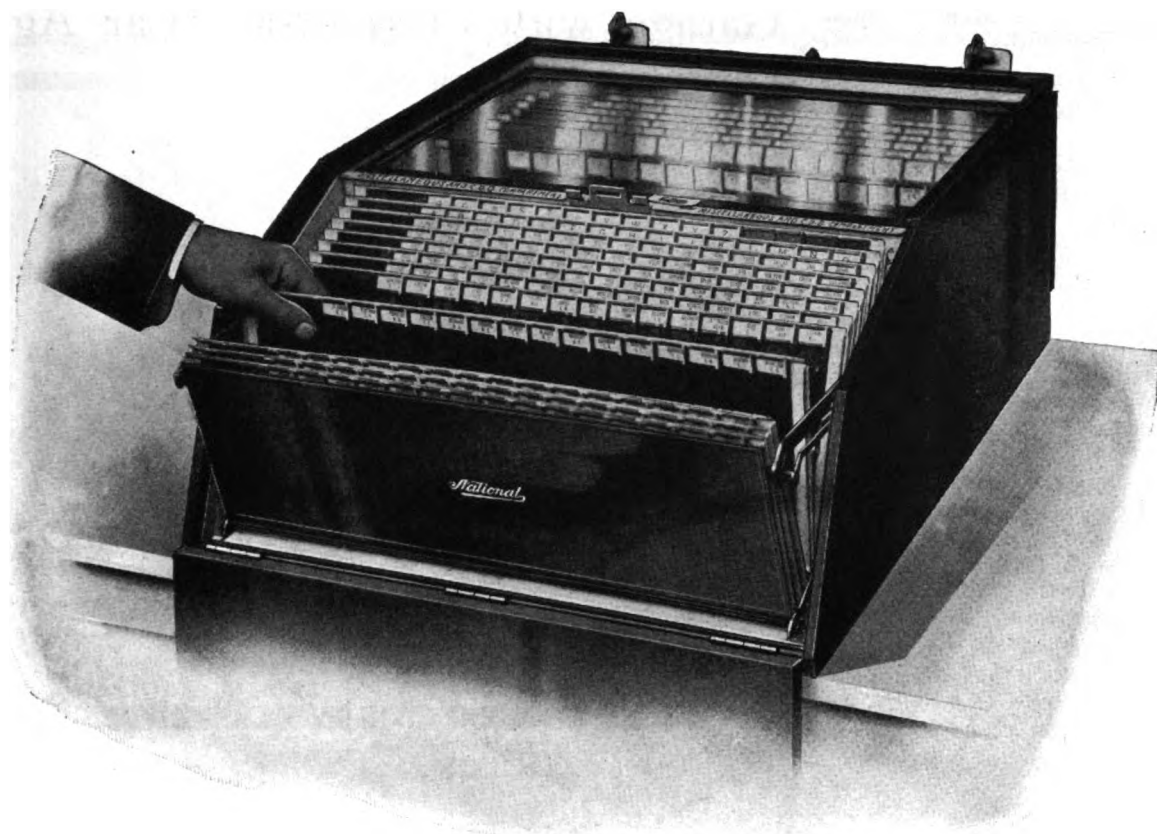
### Chicago Auto Trade Banquet.

The slate of officers to be elected by the Chicago Automobile Trade Association at its annual banquet March 12 has been completed by the nominating committee of the organization. Joseph F. Davis, the Winton branch manager, is scheduled for re-election as president, and the others named include C. R. Dashiell for vice-president, W. G. Tennant for secretary, and Henry Paulman for treasurer. Plans for the banquet, which its sponsors say will be the biggest gathering of automobile men ever held in Chicago, are in the hands of a committee consisting of Harry Newman, E. E. Esch, F. E. Parker, D. E. Whipple, O. G. Temme, Thomas J. Hay, H. P. Branstetter, C. R. Dashiell, E. G. Westlake, and Arthur J. Jones.

The Philadelphia Automobile Trade Association gave their annual dinner at the Bellview-Stratford Hotel, Saturday evening, February 17. T. S. Johnston is chairman of the entertainment committee.



From left to right: BENJAMIN HELM, manager Down Town Packard Branch, New York City; W. L. AGNEW, new advertising director Chalmers Motor Co.; ROBERT WILEY, JR., of Wiley-Carey Corporation, business manager of the new 6-story co-operative garage in New York City; L. M. BRADLEY, newly named general manager Motor Accessory Manufacturers' Association; J. MURRAY PAGE, newly appointed manager Chicago Branch, Locomobile Co.



# A New N. C. R. Invention

*As important to you as your  
telephone or cash register*

It's a new credit file that *safeguards* your credit business—in a better, easier, safer, quicker way than you thought possible.

*It is so simple* that anyone can operate it.

*It is so speedy* that all entries are made in the presence of the customer, who leaves with a statement of the purchase—plus a record of the balance carried forward.

*It is so convenient* that you can set it on any size counter, table or desk. The exact balance due from any customer is instantly available, and the file can be operated with one hand while the other holds the telephone receiver.

*It is so complete* that a true record of the whole credit business is always available in short order.

And this knowledge alone is worth more than the cost of the file.

*It is so safe* that records once filed in its locked compartment cannot be lost or destroyed. Records can be seen, but not tampered with.

A few weeks' use will pay for it.

There's nothing else like it, and it can be seen at the N C R office near you, or a letter to us will bring you complete information.

See this new file or find out how it will stop your losses, please your customers, and relieve you of work and worry. Use the coupon.

The  
National  
Cash  
Register Co.  
Dayton, Ohio

Please send full information about your new Credit File.

We have about.....  
Charge and C.O.D. accounts

Name.....

Firm.....

Address.....

**The National Cash Register Company**  
Dayton, Ohio

American Garage Magazine

## One of Auto Show's Most Unique Exhibits.

One of the most unique exhibits at the Chicago, Kansas City and Boston Automobile shows was that of the Sexton Castor Motor Oil Co., at the head of the stairs in the west end of the balcony (Chicago show). Featured in the display is "Fountain of Perpetual Motor Youth," lighted with high voltage electric bulbs.

The scientific principle on which the fountain operates serves also to demonstrate the particular features of the oil. Dropping over from one globe to the other in a solid sheet, it flows to the catch basin below. Instead of a straight line, however, it seems by some trick of its own gravity to draw inward toward the bottom and yet is not broken or does not become stringy, which President P. J. Sexton points out as showing its perfectly compounded qualities.

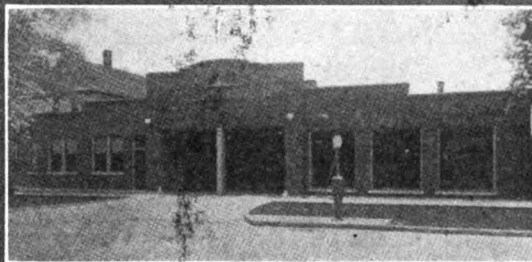
"This is simply one of the means taken by the Sexton Motor Oil Company to show the exacting and wide-awake motorists the actual condition of the oil on all moving parts of a motor when Sexton Castor Motor Oil is used," said President Sexton. "In other words, this shows a solid, unbreakable film of pure lubricant, such as is to be found when it is in its actual work of lubricating a motor.



"This would hardly be possible with the ordinary mineral oil, for the body foundation in these is not strong enough when drawn so thin to retain itself in a solid sheet. It is another plain demonstration of the efficiency of our castor-vegetable-mineral combination, which is now considered by most expert engineers to be the really perfect means of lubrication."

In the oval appears a likeness of Mr.

## Garages with Class—Have Car Agencies



Top—Volmer Bros. Garage, exclusively for Ford cars, Denver, Colo. Capacity, 250. Show room, repair shop and storage space.  
Middle—The Caswell Garage, Sandusky, O.; a new \$12,000 fire-proof building; approaches and surroundings ideal.  
Bottom—The Strang Garage, Denver, Colo., home of the White and Haynes cars; also does an extensive electric car storage, charging and repair business.



Sexton, who is acquiring world fame as an expert in the lubrication field and as a friend to all who employ lubrication in connection with autos and other high-class machinery.

### Spark Plug Tester.

The spark plug tester sold by the M. A. Levy Company can be used to test the spark plugs, the battery or the magneto. When used to test the spark plug, one tip touches the terminal cap, the other the base. If plug is working properly, a spark appears at the gap; otherwise, no spark appears. To test the battery or magneto a knife blade is inserted at the spark gap on the tester to open the wires to the width of hole. One end is attached to the feed wires, the other is ground to the engine, and current is applied. If proper voltage is being delivered a spark will jump the entire width of gap. By decreasing the gap the approximate strength of spark may be ascertained. M. A. Levy Co., 429 South Dearborn street, Chicago.

### The Twitchell Air Gauge.

Dealers wanting to add a live and valuable accessory to their line should not overlook the Twitchell Air Gauge, which

is designed to gauge the proper amount of air to inflate into a tire, which all garage-men and dealers know to be a very important function in the care of tires.

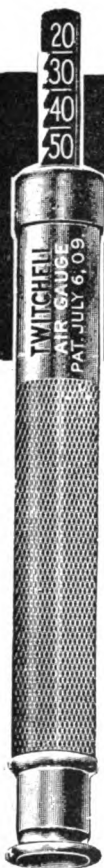
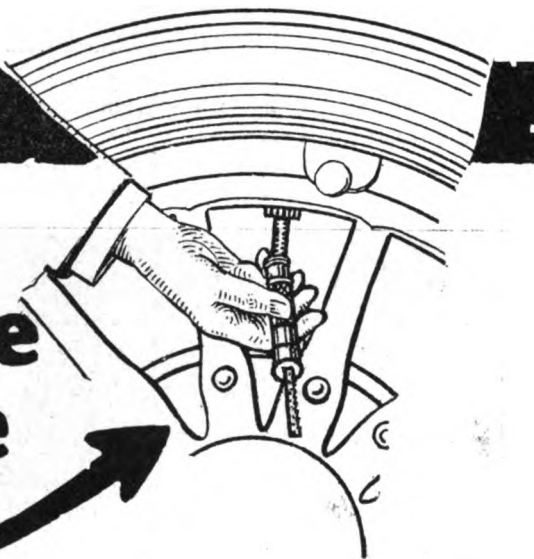


(This display card helps the dealer sell the Twitchell Air Gauge.)

The wise motorist has already been brought to realize that he can cut down the upkeep of his car by watching such things, and the dealer who carries such practical and money-saving accessories in stock is doing a real favor to his customers, to say nothing of the profit made from their sale.

The Twitchell Gauge Co. is located at 200 Michigan avenue, Chicago.

# The Twitchell will indicate the true pressure or none



**For convenience you may apply  
the TWITCHELL GAUGE upside down.  
*always locks at correct pressure***

It is generally conceded that tires which are tested as to their inflation last twice as long as tires which are run with haphazard pressure.

Moral: Measure your air pressure with a TWITCHELL GAUGE.

What particularly distinguishes the Twitchell from other pencil type gauges is the locking device of the indicator bar, which makes absolutely impossible the slipping of the bar, and the inaccuracy of reading resulting therefrom.

Thanks to the ratchet test of the Twitchell Indicator bar, the gauge remains set at the pressure of air in the tire. If any force should be strong enough to make the bar slip, it would go back to zero.

Immediate seller and profitable money-maker for Dealers and Garages to Handle.

**PRICE, ONE DOLLAR.**

**The Twitchell Gauge Co.**

200 Michigan Avenue  
Chicago, Illinois, U. S. A.



*"Tire  
Insurance  
for  
One  
Dollar"*



## Three Essentials to Business Success

By Miss Amelia G. Pabst, of Pabst Brothers' Garage, Kenosha, Wis.  
Secretary Kenosha Garage Owners' Association.

**T**HREE simple rules constitute the fundamental principles of the man or the woman who wishes to attain the greatest success in any business enterprise.

The first is **COURTESY**, which counts for far more in bringing trade to a business house and assisting the proprietor to retain it



than is credited to this virtue. A pleasant greeting will often smooth the ruffled feelings of the customer who comes into the office with a so-called "bone to pick," and send him away after an amicable talk, feeling that he is receiving fair treatment. Courtesy is a cheap investment and brings the greatest returns in the form of warm and lasting friends.

The second essential is **HONESTY**. The man who does not misrepresent his merchandise soon acquires a reputation for honest dealings, which is a most valuable asset. Combined with courtesy, fair, frank, open and above-board transactions lay a solid foundation, the value of which is inestimable.

The third little rule is **NEATNESS AND CLOSE ATTENTION TO DETAILS**. The simple duties, if neglected, soon pile mountain high. The energy required to adjust such conditions when converted into frictionless methods of performance, bring far-reaching and satisfactory results, the influence of which is bound to uplift and maintain the confidence of those with whom we come into daily contact.

## Financial and Other Automobile Statistics.

In 1909 a prominent Chicago banker advised the writer that the automobile industry was on trial; that as a whole it had not made good and that the financial standing of any automobile concern was based solely on the men back of it; that the whole automobile industry was under a financial cloud and many good banks refused to make automobile loans.

That was seven years ago. Compare it with some statistics compiled from public records by President Brown of the Elgin Motor Car Corporation:

Motor cars registered in forty-seven of the world's leading countries, 3,108,468.

Motor cars now registered in the United States, 2,500,000.

Value of cars owned in United States, \$2,500,000,000.

Average value per car, \$1,000.

Number of cars to each mile of American highways, 1.

Proportion of cars to U. S. area, 1 car to each one and a third square miles.

Increase in real estate values due to transportation by automobile, 100 to 400 per cent.

Value of cars exported in 1915, \$100,000,000.

Public roads in the United States, 2,500,000 miles.

Annual new roads and improvement expenditures, \$300,000,000.

Motor car steel used in 1915, 670,000 tons.

Imitation leather used in 1915, 3,280,000 yards.

Top material used in 1915, 11,405,250 yards.

Hickory and other woods used in bodies, 1915, 8,450,850 board feet.

Hinges used in 1915, 4,893,560.

Additions to factories in 1915, total, 11,000,000 square feet.

Cost of these additions, \$12,000,000.

Number of motor cars which made the transcontinental trip in 1915, 5,000.

Number of men employed in the industry (approximately), 700,000.

In the United States there is one car to every forty people.

In Iowa there is one car to every nineteen inhabitants.

In Los Angeles there is one car to every eight inhabitants.

## Dealers Will Correct Trade Abuses.

The Sturgeon Bay, Wis., Motor Car Dealers' Association has been organized for the purpose of steadying prices, eliminating abuses which whittle down profits and improving general trade conditions. A rule has been established to prevent dealers from throwing in extras. Purchasers will hereafter be required to pay regular prices set by the factories with freight added. Standardized charges for repair shop work will also be established.

# Tonford

TRADE MARK

## Quality Approved by Chalmers

The Famous Chalmers  
Trade Mark



Quality First  
56 & 64 in. Treads

DEALERS—The Tonford gives you the argument of superior service based on superior quality at a right price. Quick sales and big sales opportunity suggest quick action on your part. Write today.

This truck has now been in daily use nine months, hauling materials of various kinds. It has demonstrated its invincible superiority over heavier and costlier trucks. It has shown greater flexibility, greater ease of handling and surprisingly low cost of operation, and has done everything and anything asked of it, and has cost nothing for repairs.

Chalmers' judgment selected the Tonford. Chalmers' experience proved Chalmers' judgment right.

The Tonford will work just as profitably for you. Give it the chance.

Hundreds of manufacturers and merchants in every line are finding that the Tonford truck unit, built by the Detroit Truck Company, is the best designed and most completely satisfactory solution of the one-ton truck problem.

The Tonford unit can be attached to any Ford chassis, old or new. It gives a loading space of from 9 to 11 feet back of driver's seat. The Tonford Truck Unit costs only \$325.

*Write at once for literature describing it.*

**Detroit Truck Company**  
Detroit, Michigan

# \$325

**F.O.B.  
DETROIT.**



# The Law *and* The Garage Trade

*THIS department is edited by CHARLES C. BOMBAUGH, LL. B., general attorney of the American Association of Garage Owners, and a prominent practitioner in the federal and state courts; also lecturer and writer on commercial law. When information on any legal problem connected with the operation of your business is wanted, write this department.*

## Priority of Claims in Case of Suit, Storage Charges on Completed Jobs, Etc.

**Questions.**—I hold a bill for \$174 for material and repair work against Frederick's Sanitary Dairy of this place. In October, 1916, I sued Mr. Frederick, the owner and proprietor, for this amount; he appealed the case and it will come up in May, 1917, under bond of \$100. Did the magistrate have the right to set the bond as low as that without my consent?

In November, 1916, Mr. Frederick left for parts unknown and is still among the missing. Soon after he left, his other creditors got together and presented their bills and with the sheriff acting for them sold all goods left by him, I being cut out on account of being obliged to wait for the appeal court and, in the meantime, other creditors get the benefit of the available goods. This, I think, is positively unfair, as I was first to start legal proceedings. What do you advise me to do? Or what shall I do in case another such case should develop in my business? Is there still a way for me to collect this bill?

I have a truck in my garage for repairs. The owner says he will bring the required new parts to be used for repairing, but never put in his appearance. I have done some work on it. I do not have the room to keep it so long, as I need the space for other jobs. Can I charge him storage, and if so, from what date can I charge it? Also, if he should never come for it, how long must I keep it before I may sell it to get my money?

I have two other cars in my garage for repairs. These cars I have repaired and have furnished new parts, but I will not let them go without the customers paying first. They are not complaining about the amount of bill, but they simply do not come for the cars. I do not keep a storage garage, and I need the space. I have notified these customers several times, but get no satisfaction. Can I charge storage from the time the cars were finished, and will it be legal for me to charge \$1 per day? I should like to get these machines off my hands but must have something for my work and parts. Can you give me a plan? H. O. E., Pennsylvania.

**Answers.**—Unless fixed by statute, as is usually the case, the magistrate has a right to fix the bond without consulting

either party to a suit. He usually hears arguments, then makes his decision, or if he is a careless or arbitrary judge he may do so without hearing any arguments, as discretion is vested in him by the law and his decision is final.

I fear that in entering your suit against Mr. Frederick you did not attach the property, and if others have done so and sold it you would be the loser, regardless of your being the first to bring suit. Your only recourse is to a suit on the appeal bond.

In any future similar case you should attach the goods if there be the slightest grounds for doing so, particularly if you think they are likely to be removed from the jurisdiction of the court in which you file your case.

Whenever a garageman or shopman repairs a car, and it is ready for delivery and the owner does not come for it, he is warranted under the law in charging storage from that time on.

If the party does not come after his car within a reasonable length of time, suit can be started, judgment obtained and a levy made on the property. The garageman is fully warranted in holding a car that he has stored or repaired until he receives his money—that is, he can refuse to let it go out until the bill is paid, except when served by a writ of replevin issued by some court of competent jurisdiction. Then he is not required to use his elevator or other equipment for the benefit of the officer serving the writ and can charge for such use any sum he sees fit.

The storage charge per day should be the charge that is prevalent in the neighborhood or section of the country, based on the kind and character of the service. In other words, if the garage is as good a place to store a car as other garages which charge \$1 a day, that should be the charge, but if your particular place of business does not compare favorably with garages that charge \$1 a day, it would not be wise to put in a claim for that amount, but to make the claim reasonable and fair from every standpoint.

\* \* \*

## How to Collect Labor and Material Bill in Missouri.

**Questions.**—I have just finished a repair job on a car, consisting of material and labor to the amount of \$439.50. The owner has been advised that the car is ready for him. He contends the job's cost is too much and that he has been held up, etc.

The labor bill was a small item, as 35c an hour was all that was charged against the car. It was a slow job and hard to handle. The car was in very bad shape.

How is the best plan to collect the bill, and how long must I hold the car before it can be sold for bill on same?

When cars are in my shop for repairs or storage, what is the best thing to do in reference to fire? If fire loss should happen to a car in my place, am I liable for the loss, and what is the best protection for me? G. A. B., Missouri.

**Answers.**—Under the statutory lien law applicable to automobiles you should file a statement of your claim with the clerk of court. The action you thus start is an equitable action to determine your and the car owner's respective rights. The court will examine into the facts, order the car sold and distribute the proceeds in such manner as to work out the ends of justice. This method is exclusive of all other remedies, which means that if you will proceed in this manner you cannot commence another action against the party for debt and secure a judgment.

You have the car in your possession and did well in holding it. I assume from that that the party is not good and a judgment against him would not be collectible, therefore you would not be warranted in suing.

When cars are in your shop for repairs or storage you are not responsible for their loss by fire if you use all reasonable precautions against the occurrence of a fire. This, of course, includes compliance with all the laws and ordinances applicable to your business and in other ways are not careless or negligent. Some garagemen and warehousemen carry insurance on everything in their establishment and use this fact as advertising to secure business. As you doubtless know, the A. A. G. O. has an insurance department through which we can save garagemen some money, not only on fire protection but all forms of casualty protection as well. Particulars on request to any interested person.

\* \* \*

## The Deposit Confidence Game.

Another abuse of the so-called "good faith deposit" has been called to our attention. In this instance a St. Louis, Mo., motor car company accepted a deposit from one of our members in Shelby County, Missouri, then a short time later the St. Louis concern just vanished, went out of business, failing to return the deposit as provided in the contract.

It is time some criminal action be taken against those responsible for these conditions, and I suggest, in this instance, and other similar ones, that the prosecuting attorneys of the different jurisdictions be consulted and appropriate prosecutions begun. Let's get together and break up this sort of a confidence game.



# Dealers—Get the Benefit of This

## Smith Form-a-Truck

# \$350

F. O. B. CHICAGO

*Smith Form-a-Truck dealers are the biggest single factors in motor truck service in their territory.*

Smith Form-a-Truck has been the selling sensation of the past year—the best merchandised motor truck or motor truck attachment.

Sales volume has exceeded that of all other attachments combined and that of any other manufacturer of motor trucks.

Tie up with the colossal sales success achieved by Smith Form-a-Truck—create big business—big profits—big individual success for yourself through the co-operation of big merchandising helps—the strenuous sales efforts that are creating sales in your territory.

Now, Smith Form-a-Truck sales effort has doubled: advertising has doubled: merchandising effort is doubled. Your chance for success and the success of every other Smith Form-a-Truck dealer has increased in proportion.

Live, wide awake, aggressive dealers are the dealers handling Smith Form-a-Truck. You can now furnish Smith Form-a-Truck attachments for Maxwell, Dodge Brothers, Buick, Chevrolet and Overland cars, in addition to the Ford. Think what this means to you in increased sales possibilities—in profit developing new business.

Time is limited in which you can act. Available territory is being snapped up by wire and by telephone.

You must act quickly. Applications for dealerships are being considered strictly in the order that they come in. If you are the dealer best qualified in your territory, you can start selling Smith Form-a-Trucks now at the very start of the big selling season. Start realizing maximum profits—start building up sales. Despite rise in price announced by all other manufacturers, Smith Form-a-Truck price stays at \$350. This applies to attachments for all makes of cars on which the installation can be made.

The time to act is now.

## Smith Motor Truck Corporation Manufacturers of Smith Form-a-Trucks

Executive Offices and Salesroom, Suite 984 Smith Form-a-Truck Building

1470 South Michigan Boulevard, Chicago

**Eastern Branch**  
1834 Broadway, New York

**Kansas City Branch**  
1808 Grand Avenue

**Pacific Coast Branch**  
Pico and Hill Streets, Los Angeles

**Southern Branch**  
120 Mariette Street, Atlanta



# Garage, Shop and Store Insurance

*THIS department is edited by MATTHEW WHITE, insurance commissioner of the A. A. G. O., who desires a free discussion of all subjects dealing with the insurance problems, fire and casualty, of our readers and members. Application blanks, etc., on request.*

## THE REALIZATION.

The realization of all our hopes have been fulfilled—that is, those of us who are paying insurance premiums, particularly Fire and Casualty, and therefore keenly interested in the formation of an Inter-Insurance Exchange under the auspices of the American Association of Garage Owners.

We can perform an immediate service for every garage owner who is paying a Fire or Casualty premium. This service we have been giving for the past four months and we have been complimented by many for the benefits obtained through our service.

There is no reason why garage owners, repair shop men and auto dealers may not enjoy the benefits of their own Insurance Organization. It but needs businesslike support and co-operation to make it the strongest organization of its kind in the country. Every day we are adding another stone to our structure.

The first subscribers to our Exchanges will no doubt look back with pride to the day they were the pioneer members of the **American Garage and Auto Dealers' Exchanges.**

It is a big work in a big business and it takes big men to build for themselves as well as others.

\* \* \*

## AFTER THE CONVENTION.

Last month in these pages we "showed you" by the actual evidence of fac-simile cuts of policies and letters what we were able to do for one of our western members. No doubt there are many more to whom we could deliver the same or greater benefit if we were given the opportunity. We have the machinery, and it is machinery that has been made possible by unselfish men, men who, like our forefathers, blazed the trail and built up great cities and the greater opportunities that all of us are enjoying more or less today.

Let us "show you" as we did our western member last month. We will not guarantee that we can save all members as much as we did this one (\$425.00), but we will save you something and we believe if we gave you only an "even break" we are entitled to your first consideration when placing your Fire or Casualty Insurance.

We are entitled to your consideration because we are, through organization (the only way), building an insurance efficacy that will in a short time save every subscriber as much, if not more than, one-

half of his present premium, and at the same time he will have the soundest kind of insurance.

\* \* \*

## SCOPE OF THIS DEPARTMENT.

Service to the members of the Association and the readers of the journal is our whole purpose. If our long and varied experience in the insurance and business field is of advantage to any of our members or readers outside of the actual insurance on garages, automobile warerooms, repairs shops, etc., we will be pleased to serve. For instance, we no doubt can readjust the insurance rates on your home or its contents. You never know until you try. Let us help you.

The time to seek this assistance is when your insurance is about to expire; leave ample time ahead so that we may have time to do our best work for you.

\* \* \*

## WHERE ARE YOUR POLICIES?

Frequently a garageman, auto dealer or repair shop owner is compelled to borrow money to enable him to build, enlarge or expand his business, and the mortgage requires the policies be written so as to protect the money lender and that he hold the policies. This does not mean that you should lay down and not take advantage of an opportunity to get your rates of insurance lessened, either by additional safeguards, appliances and services, such as ours, which will lessen your hazard and interest burden that is now possibly greater than you can very well afford.

Your banker, if he is a fair man, and most bankers are, will recognize the thrift which you evidence by endeavoring to lessen your burden, either by strict application to business methods, prompt payment of obligations and interest charges, as well as the curtailment of unnecessary expense.

High insurance rates can be lessened by

our service. We can handle your case and get you a lower rate, and in many other ways we can be of mutual assistance, pointing out how and where to make a change to lower your rates, because, after all, insurance is the amount of the policy against your premium based on the nature of the risk the character, surroundings and safeguards involve.

Look up your rates, even though your banker has the policies in his custody, and see that you get what advantages you have earned either by care, skill, safeguards or membership in the American Association of Garage Owners.

\* \* \*

**WANTED** in Ninety Days 500 Garage Owners, Auto Dealers and Auto Repair Shop Owners to join together for mutual gain and profit.

All you have to do is to get out your Insurance Policies, both Fire and Casualty, look up the expiration dates, note the amounts of the premium, the rate you are paying and decide that, by sending your policy or policies to us the next time for renewal, you will be justified in doing so when you can create an organization of your own which will save you and your fellows in the same line of business from 30 to 50 per cent of your premium cost the first year. We have earned and received the approval of the Illinois Insurance Department by the submission of all our plans and aims.

We have already secured quite a number of subscribers and saved them money at the start. We can "show you" and make you a factor in your own organization. Each subscriber has a vote in the government of the Exchange.

WRITE US, declaring your intention of becoming one of the pioneers of the American Garage and Auto Dealers' Inter-Insurance Exchanges.

CUT THIS OUT, FILL IN COMPLETELY, AND IT WILL BE ATTENDED TO AT ONCE

## American Garage and Auto Dealers Inter-Insurance Exchange 53 West Jackson Boulevard CHICAGO

MATTHEW WHITE,  
Insurance Commissioner.

I am interested in insurance of the following character and wish you would send me full particulars without any obligation on my part whatever:

- |   |   |
|---|---|
| <input type="checkbox"/> Fire Insurance on Building | <input type="checkbox"/> Fire Insurance on Contents       |
| <input type="checkbox"/> Workman's Compensation     | <input type="checkbox"/> Employer's Liability             |
| <input type="checkbox"/> Public Liability           | <input type="checkbox"/> Property Damage (inside and out) |

Name..... Address.....



## The Secret of "Small Up-keep" is Perfect Lubrication

The first cost of an automobile is important, but what does it cost you to run it? That's more important. Is your car laid up frequently — scored cylinders — burned out bearings — smoky spark plugs?

Use **Polarine**  
FRICTION REDUCING MOTOR OIL

A perfect lubricant that covers even the remotest friction surface, protecting every wearing part and reducing friction to the minimum. Friction minimized means repairs minimized and increased power as well.

Polarine flows freely at zero and maintains the correct lubricating body at any motor speed or temperature.

Order a half barrel today. It's cheaper that way than in smaller quantities.

Standard Oil Company (Indiana) Chicago, U. S. A.

Use Red Crown Gasoline and get more power, more speed, more miles per gallon

14a

# Mechanical and Engineering Problems

*THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and now consulting engineer with the Western Electric Co. When shop information is desired, write Mr. Hinrichsen, care this office.*

## A Carburetor Job.

**Question.**—We have had a good deal of trouble with a Jackson 1911 car not working right. Some days it goes along good, but if there is a strong wind blowing, and we are going against it, the carburetor spits and sputters and the engine often dies. What do you think might cause this?

J. G. F.

**Answer.**—The car you refer to was built before carburetor manufacturers had made the great improvements that have come in the last few years. You can, however, so arrange your present carburetor that this trouble will be overcome.

The air intake is an open one. That is, it takes its air directly from the outside, without any heating or shielding devices. It is also located in such a way that a rush of air from the front will disorganize the whole mixture.

Put an air intake pipe from the carburetor air intake to a "stove" or clamp on your exhaust pipe and you will have no more of this kind of trouble.

## \* \* \* An Eye to Business.

**Question.**—On page 44 of your January, 1917, issue I note that a subscriber signing as "A. W." desires assembling a speedster, and we are writing you to ask if you would violate any of your rules by divulging the true name and address of the person, as we have several of the parts that he desires for his speedster, and probably we can get together to a mutual advantage? We will thank you for an early reply.

— SALES COMPANY.

**Answer.**—This is a concern with its eyes open to business. It certainly does me good to get a letter like this.

I have written the firm referred to and sincerely hope you will be able to do business with them. You will if I can help you any. As soon as I hear from them I will write you.

Let me congratulate you on your business acumen and predict that if you keep it up the sheriff will never have to nail any notices on your door.

\* \* \*

## Curing a Knock.

**Question.**—I noticed an article in your January issue on page 36 about curing a knock in a Ford motor.

Please allow me to suggest that this man make an examination of his timing gears. I think that he will find that the knock he refers to is back lash of the teeth.

He can make this test by removing the oil filler cap in the motor over the timing gears and rotating the gears with a screw-driver.

R. E. H.

**Answer.**—First, let me express to you our appreciation of the interest you take in this department and thank you for the suggestion.

Back lash in timing gears can and often does cause a knock, but I did not think, from his description of the trouble, that it could be caused by this. However, your suggestion is good, and I like the spirit in which you make it, and believe that you have found a point upon which I possibly did not place enough importance.

\* \* \*

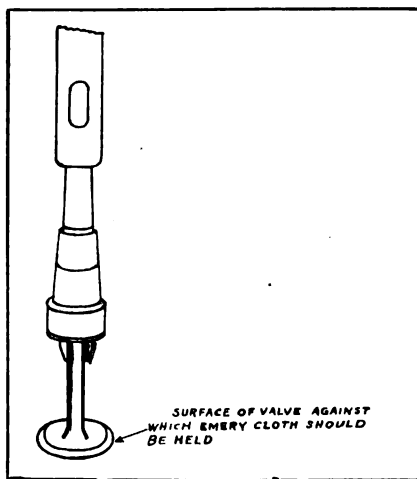
## Smoothing Up Valves.

Valves that have gone too long without grinding are often found to be in such a state that it would be almost an endless undertaking to grind them into shape against their seats in the regular way.

Sometimes the repairman will put them in lathe chuck and take a very small cut from the valve face, but this is often the cause of a badly seated valve, as, unless the cutting tool is on exactly the right angle, the valve will never fit its seat again.

A much better way is to revolve the valve rapidly in either lathe or drill chuck and hold a piece of fine emery cloth against the seating surface until the worst of the pits are removed and then grind in the usual way.

The sketch shows the valve set in a drill chuck ready for the emery cloth.



## Repairing a Chevrolet Car.

**Question.**—We are having a lot of trouble with a 490 Chevrolet up here and wish you would give a little advice if you should happen to know about their troubles.

The car, after being driven about 3,000 or 4,000 miles, and bearings all a trifle loose, burned out No. 2 connecting rod while traveling at a medium speed. The

trouble seemed to be in the oil lead to the trough, as it was clogged up. A new bearing was fitted, which lasted about a week or ten days, when it burned out while idling. The other bearings had been taken up the first time, but when the pan was taken off they were all loose again and the oil lead to the trough under No. 2 was open this time, and there seemed to be no reason why it should burn out.

This time special care was used in fitting the rod so as not to be quite as tight as usual, and motor could be turned over by hand with all bearings taken up. There was a screen put over the oil pipe which leads to the bottom of oil sump from pump so as to keep the pipes from clogging. The bearing lasted about a half hour, and when oil pan was taken off No. 3 was again loose and No. 2 burned out, with seemingly plenty of oil in trough. The crank shaft is now rather rough and would not hold a bearing long now, but before the seizing it was in fair shape.

Do you think any fault would result if the holes in the sides of troughs were plugged up so as to carry more oil in them? Or do you think the oil pump is not feeding fast enough? Also, what should be done with the crank shaft? The owner does not care to spend more on the car than is absolutely necessary and would rather not have shaft taken out, if possible to do it any other way.

THE ——— GARAGE.

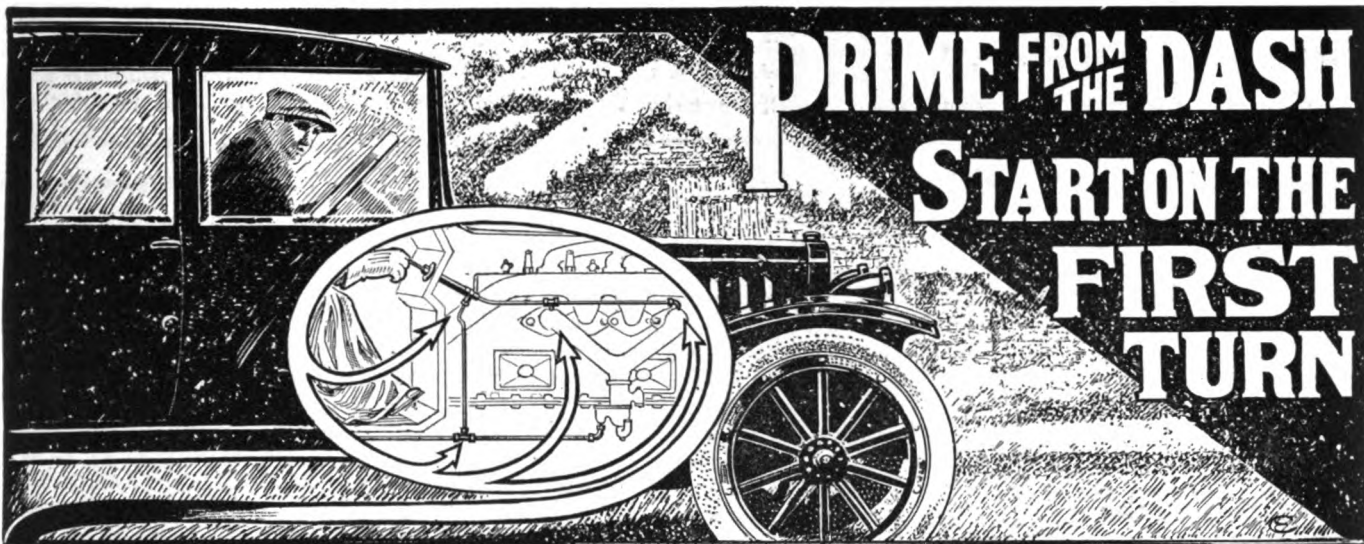
**Answer.**—The original burnout was, of course, caused by lack of oil. The subsequent burnouts were probably caused by the crank shaft being out of true at the bearing points.

A crank shaft on which a bearing has been melted often gives a good deal of trouble afterward.

It can easily be determined whether the trouble is caused by lack of oil or not. Measure the distance that the scoops on the bottom of the connecting rod caps would project into the splash can. This can be done by turning the cranks to bottom center, one at a time, with the oil pan off, placing a straightedge across the open part of the crank case and measuring the distance that the scoop comes below the straightedge. This dimension will be the distance that the scoop will extend into the oil pan, less the thickness of the gasket between the oil pan and the crank case.

Now fill the oil pan with oil until it runs out through the overflow holes. Lay the straightedge across the oil pan and measure the distance from the straightedge to the surface of the oil. The difference between the first and last dimensions will be the distance the scoops dip into the oil.

It would be well to try each bearing in



Here is your opportunity to do a profitable winter business on a tried and proved **necessity**—not an accessory.

Cash in on the big demand we are creating for the Imperial Primer—see our advertisement in the January 27th issue of the Saturday Evening Post and the large space used in all leading auto magazines and trade journals.

Every car owner who comes into your garage is a good sales prospect. An Imperial Primer will solve the cold weather starting trouble and encourage your customers to use their cars oftener in winter—meaning more money in gasoline, oil, etc., for you—besides the nice profit in the sale and installation of the device itself.



**A Necessity**  
Not an Accessory

**Imperial  
Primer**

**\$5** Complete  
for ANY Car

Think what a **big** advantage it is, in these days of low grade gasoline, to be able to let your car stand for hours in the cold with the full assurance that it will **always** start on the **first turn-over!**

That is just what we **guarantee** the Imperial Primer to do on **any** car in the coldest weather! Drivers of old cars use the Imperial Primer all the year round to insure quick starting.

This little device is located on the dash of the car and sucks up gasoline from the main gas line and then sprays it into the manifold near the motor in the form of a fireable mixture which absolutely insures starting on the **first turn**.

This outfit consists of a small, substantially-made plunger pump, all necessary bolts, connections and tubing furnished, ready to mount on the dashboard of any car, any model. All connections made by the well-known Imperial Compression couplings. No soldering, flaring or threading required except on the manifold. Simple but complete directions for installation and operation accompany each outfit.

The Imperial Primer is just as necessary on cars having self-starters because it saves the batteries and gives a quick, positive start every time. To those who crank their engines by hand this is an **INDISPENSABLE** labor and temper saver. Try the Imperial Primer 10 days, money back if not satisfactory.

If your jobber cannot supply you, write us direct.

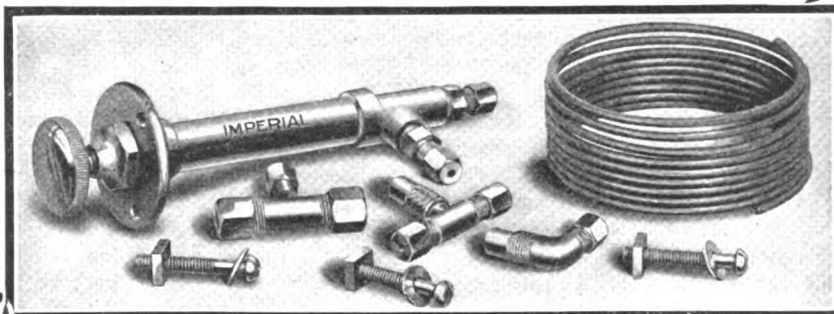


**Imperial Brass Mfg. Co.,** 529 So. Racine Ave.  
**CHICAGO**

#### OTHER IMPERIAL PRODUCTS

Oxy-Acetylene Apparatus  
Compression Couplings  
Gasoline Strainers  
Priming and Shut-Off Cocks  
Wixom Hand Tire Pumps  
Oil and Air Dash Pumps, etc.

Visit our exhibit at the  
**CHICAGO AUTO SHOW**  
Balcony spaces Nos. 90-91





this way and compare results. You may find that No. 2 bearing is not getting its oil.

In some cars of this model the bearing caps and bearings were drilled to facilitate the oil passage. That is, a hole was drilled through both bearing and cap, so placed that the oil picked up by the scoops was forced directly into the bearings through the holes and spread over the surface by means of grooves cut in the bearings. I do not know whether your car is so arranged or not, but if not this would provide a larger supply of oil for the bearings and is easily done.

If the scoops dip well into the oil I do not think you would find it advisable to raise the oil level by plugging up the overflow holes.

If the pump throws a good supply of oil any increase in its flow would do no good.

Always bear in mind that the manufacturer subjected the engine to tests such as would be impossible for the garageman to undertake, and that the arrangement of the lubricating system was made as a result of these tests. The intent should be to put the car, as near as possible, in the same adjustment as it was originally.

I am afraid that the crank shaft will have to come out in this case. It is a big job to polish it down in the car and is not always satisfactory.

Follow the above closely and I think you will find the cause of the trouble. I would not advise any changes, except drilling the bearings and caps, if it has not already been done.

\* \* \*

### Trying Out Magneto or Dynamo Before Reinstalling.

A magneto or dynamo that has been removed from a car for repairs should always be tried out before being reinstalled. This is particularly true of a dynamo if the governor is to be reset.

A lathe is well adapted to this use, and if a few simple tools are made and kept on hand it is no undertaking at all to make the tests.

All that is required is one or more small lathe dogs suitable for attaching to the shaft of the magneto or dynamo, a piece of 5/16-inch steel rod about 2 feet long, with one end pointed and a lug brazed or welded on it near the pointed end, and a set of iron blocks for locating the device to be tested at the proper height above the lathe bed.

With this arrangement the magneto or dynamo can quickly be set at the proper place on the lathe bed and securely clamped, the dog slipped on the shaft and the rod placed in the lathe chuck. The pointed end of the rod goes into the drilling on the end of the shaft and the lug on this end of the rod drives against the lathe dog.

The accompanying sketch will give an idea as to the arrangement.

With a dynamo thus mounted, by using

a speed indicator, voltmeter and ammeter, a very fine adjustment may be attained.

\* \* \*

### How to Prevent Platinum Points Coating.

**Question.**—I read all the questions and answers for the good of the auto repairman and would like to have this question answered: How can you prevent the platinum points from coating? What I mean is this—the upper point on a coil or relay, or even a magneto, will always have a hole in the face, while the bottom point will always have a heel. What causes this?

J. J. K.

**Answer.**—The trouble you refer to is caused by the points being slightly fused or melted by the arc between them, made when the contact is broken, and small particles of platinum being taken from one point and deposited on the other.

When the circuit is closed through the primary or first winding of the coil the

ing and polishing of the points occasionally keeps them in good shape. I have found that a very fine pocket nail file makes a very convenient tool for this, but it is well to finish with a very fine emery cloth.

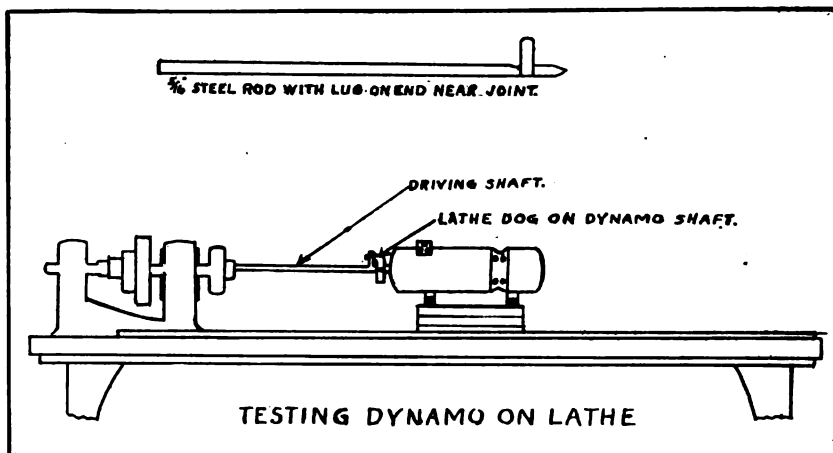
\* \* \*

### Stopping a Cylinder Water Jacket Leak.

**Question.**—Please give me some information on how to stop a leak in the water jacket on a cylinder of a Mitchell 1916. The water was drained out of the radiator but did not all drain out of the cylinders, and they froze and made a crack 3 or 4 inches long and about the size of a knife blade.

W. C. B.

**Answer.**—The best thing to do is to take the cylinder off and either weld or braze the crack. If, however, a temporary repair is desired, the crack can be slightly enlarged and brightened with a file point and a strip or string of pure lead peened into it. This should be covered with metal



iron core directly under the lower part is magnetized and the spring which carries the lower point is drawn down. This pulls the points apart, breaking the circuit. At the moment of breaking an arc occurs between the points, caused by the current following the gap between the points for a small distance. As soon as the separation occurs between the points the iron core is demagnetized and the spring closes the points again, restoring the circuit and again magnetizing the core.

This action is very rapid and produces an almost continuous arc between the points, and to this arc is due the slight fusing that allows the platinum to be transferred from one point to the other. The arc is greatly reduced by introducing a condenser into the circuit, but there is always some of it left.

The direction in which the current travels decides which point gives and which takes.

The same thing occurs with a magneto, except that the make and break is mechanical instead of electrical.

If this pitting or coating is abnormal, the condenser is either wholly or partially short circuited and should be replaced.

Under ordinary conditions a little grind-

cement and allowed to harden. I have seen repairs of this kind run for a season or more without giving trouble. The lead should be peened in while the cylinder is hot.

\* \* \*

### Tapping the Manifold and the Vacuum Feed.

**Question.**—I have been wondering if by tapping the manifold and taking steam from the radiator it would hurt the action of the vacuum feed enough to trouble the feed, or is it, in your opinion, worth while to put one of them in?

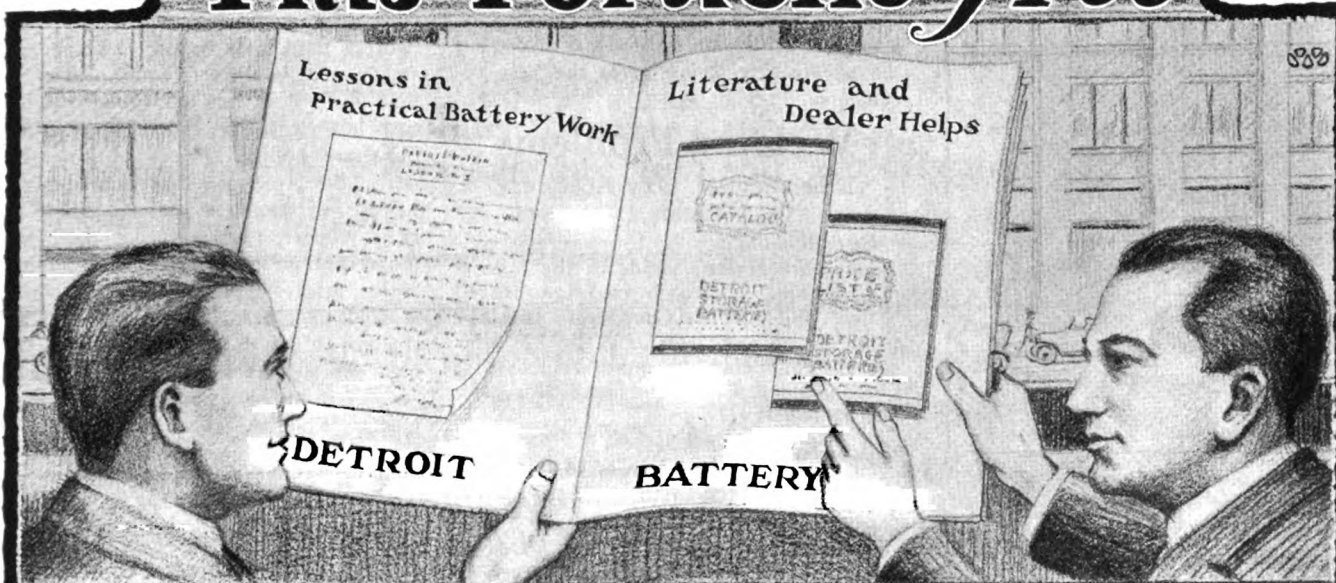
I have an Oakland Six, which carbonizes at times, and if it will not interfere with the feed I will put one in just to try it for others who want them.

A. J.

**Answer.**—The steam tap from the radiator will not interfere with the vacuum feed, providing it is not too large. The vacuum feed requires such a small amount of suction from the intake that it is scarcely appreciable.

I question, however, the advisability of the steam as a carbon remover. It adds piping, etc., and, with the many good methods now available for removing carbon, it would seem to me to be hardly worth while from this standpoint.

# We Want to Send You This Portfolio *free*



## This Proposition is Intended Only For Progressive Dealers

**M**EN who have made the most careful study of the motor car field say that the battery business is the most profitable and the fastest growing branch of the automobile and supply business. The business is still young in spite of its enormous volume. Motorists have only now come to recognize electric equipment as a positive necessity.

Scarcely half the cars running today have electric equipment. Two years from now over five million cars will be on the road and from eighty to ninety per cent will be electrically equipped. The battery business will be doubled or trebled. At least four million car owners will be buying batteries and service *again* and *again*. For, bear this important fact in mind: there are only two things on a car that are sure to wear out periodically—tires and batteries. This is what makes the battery business such a sure, safe-selling proposition.

We believe every progressive dealer should seriously consider entering the battery business now right at the beginning of its greatest growth. Few sections have enough good battery service stations. The business is sure. The profits are large.

The Detroit Battery Co. have a proposition for assisting any live, progressive dealer to enter the battery business, such as has never been made by any other battery concern. This large portfolio explains it fully.

Page 2 shows the big new Detroit Battery Plant that backs up the dealer and makes possible the shipment of orders and parts the day they are received.

Page 3 holds a specially dictated proposition to you—detailing exactly what will be necessary for you to do to enter the battery business in your particular locality—the expense and the probable profits.

Page 4 shows the equipment you will want to install and its cost.

Page 5 shows a sample of the course of lessons in practical battery work we give absolutely free to Detroit Battery men who have not had sufficient battery experience. We take the mystery out of the work. No Detroit Battery sales or service station will fail from lack of practical knowledge.

Pages 6 to 13 are devoted to displaying actual samples of our dealers helps sales and promotion plans—signs, catalogs, bulletins, direct advertising, etc.

Page 13 shows the simple office and accounting system we have had planned by an expert accountant for our dealers and service stations. You can see that our co-operation extends to points never before touched by any battery maker.

Page 14 shows a sample contract giving all details of our proposition.

By all means you ought to send for this portfolio at once. It may show you the way to a tremendous increase in business and profits.

# DETROIT BATTERIES

**Detroit Battery Company**  
Detroit, Michigan

Detroit Battery Company,  
108 High Street, Detroit, Mich.

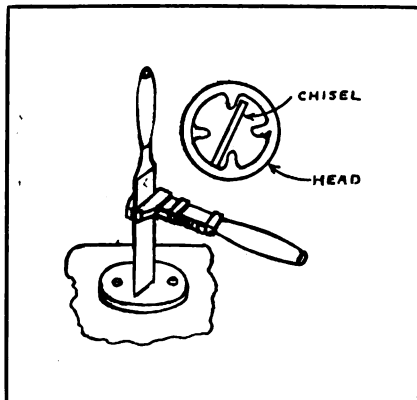
Send me the portfolio.

Name \_\_\_\_\_

Address \_\_\_\_\_

### A Device for Removing Valve Heads that Have Fins on the Inside.

The above rough sketch illustrates a device that will facilitate the removal of valve heads from a motor where the fins are inside of the cap.



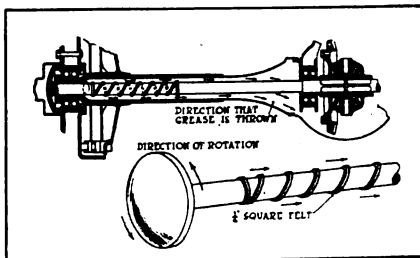
By inserting an old  $2\frac{1}{2}$ -inch wood chisel between the fins after removing the spark plugs and pet cocks and turning with a monkey wrench the heads will turn very easily, even though rusted on the threads. The same method will work with heads having fins cut on the edge by laying the screwdriver across the top and applying the monkey wrench.

\* \* \*

**Editor's Note**—Let other readers of the AMERICAN GARAGE AND AUTO DEALER send in their ideas and get dollars in return. "The more the merrier."

### Throwing Grease from Differential Out at Hubs.

A great many cars have a bad habit of throwing grease from the differential out at the hubs, smearing the brake bands and making a mess of things generally. This is especially true when the differential has been filled too full or a grease of too light a body used.



The usual method of holding the grease back by means of felt washers between the hub and outer bearing often fails to answer the purpose, but the following method has been found to be very satisfactory:

Take a piece of  $\frac{1}{4}$ -inch round, or, better still, square, felt string and, starting at a point on the axle just inside the outer bearing, wind it around the axle in the opposite direction from which the axle rotates when the car is going forward. The felt should not be wound with the windings close together, but well apart, as shown

in the sketch, in order to give a good screw effect.

The felt should be well shellacked before putting it on and the ends firmly laced to the axle with cord, also shellacked.

If felt is not available, a good cord of somewhere near the right size will do, but the square felt string gives the best results.

### Welding Problems Efficiency of Oxy-Acetylene Welds.

**Question**—What is the average efficiency of acetylene welds of the following metals: Malleable castings brazed with Tobin bronze, malleable castings welded with cast iron or malleable filler rods, steel welded, bronze welded, cast brass welded, steel and malleable iron butted together?

G. C. H., Kansas.

**Answer**—The best answer to this question may be found in the columns of the Acetylene Journal and is as follows: The efficiency of the various welds referred to is quite variable because of the nature of the materials, and the different effects the handling by the different operators will have upon the properties of the weld and the material adjacent to the weld. Because of the effect of the heat of the welding flame upon the properties of malleable castings, if heated to too high a temperature, the operator must be careful not to bring the edges of the metal above a dark yellow.

When welding with malleable welding rods or cast iron welding rods the material must, of course, be brought up to a fusing temperature. This naturally destroys the malleable properties and the strength of the joint will be only 50 or 60% of that of the original material. The main weakness will not be in the weld, however, but in the material adjacent to the weld, because this latter section will have had its strength lowered by the high temperature.

When using Tobin bronze in making what in effect is a brazed joint the strength will be about 80% of the original material. In this case the weld will be the weak portion. Steel to malleable castings will have about 50 or 60% the strength of the malleable casting. Steel welded to steel will run from 85 to 95%, depending upon the heat treatment and care that the welder gives the work. If the weld is heated up to a bright red and then hammered until just before it becomes black, the grain will be made finer and the strength will be very nearly 95% of that of the original material.

Cast bronze and cast brass should run approximately 85%. These will vary, of course, because some of the bronzes and brasses on the market are special alloys which have received their high strength from special heat treatment and special handling in casting. In these cases the strength will only run about 50 or 60%.

## The Markets

**General**—All branches of our industry report an unusual active period of trading. Difficulties are associated more with deliveries than with sales. Accessory and supply manufacturers and jobbers state that business is not only good but better than last year. The general market conditions are bullish. Prices in general are rising, the principal advances in quotations being for products manufactured from brass, copper, lead and zinc. Lathes and tools continue scarce and are selling at higher prices. Everything the jobber sells is sold at current quotations subject to change at the day of shipment. Garagemen and dealers are advised to stock up somewhat in advance of current requirements. While the close of war will bring lower prices, these lower values are not likely to obtain before moderate surplus stocks in the hands of dealers would be absorbed.

**Scrap Metal**—This market is active, the larger demands being for red and yellow scrap and lead scrap. Aluminum is the dullest product on the list. Current quotations rule on sales of garagemen to wholesale buyers, are as follows:

Heavy copper, 28@28½; heavy copper wire, 28@28½; light copper, 25@25½; red brass, 24@25; red car boxes, 21@22; brass clippings, 20@20½; red brass borings, 20½@21; yellow brass turn. & bor'gs, 17½@18; heavy brass, 19@19½; light brass, 14½@15; medium brass, 16½@17; auto radiators, 12½@13; zinc, 7½@8; lead, 8@8½; lead dross, 5@5½; battery plates, 5½@5¾; No. 1 pewter, 32@33; Block tin pipe, 41@42; tin foil (99%), 36@37; solder joints, 10½@11; old nickel, 18@20; new aluminum clippings, 44@46; aluminum bor'gs & turn's, 19@21; cast aluminum, 30@31; mixed babbitt scrap, 9@9½; copper shells, 8½@9.

### Aluminum Welding Rods.

**Question**—What is the best welding rod for aluminum welding, and how can I make aluminum welding rods from aluminum castings such as crank cases?

J. R. H., Virginia.

**Answer**—Undoubtedly the best welding rod for aluminum castings is made of 93 per cent pure aluminum and 7 per cent pure copper. This meets the requirement of the ordinary job shop where each casting or crank case is made of a different alloy.

It is hardly a safe proposition for garage mechanics for shops to make their own rods because you cannot tell what is in the average scrap aluminum or copper, and therefore cannot vouch for the correct composition of your rod. By the time a crucible and forms to pour the metal into are paid for, the expense entailed more than offsets the amount saved.

## Here is a Profitable Line for Dealers and Garages

An automobile storage battery will last from a few months to years—depending entirely upon the attention and care bestowed upon it by the owner. So batteries must be replaced.

We have worked out a plan that will prove profitable to automobile dealers and garages who desire to become USL Service Stations, Agents or Dealers.

Tear off the corner of this Ad and mail it at once to the USL factory or nearest USL branch.

### U S Light & Heat Corporation

Drawer "G," Niagara Falls, N. Y.

Branches in: NEW YORK CLEVELAND DETROIT  
CHICAGO KANSAS CITY SAN FRANCISCO WASHINGTON, D.C.

*Service Stations in Principal Centers*

U S L—Niagara Falls, N. Y.

Please mail me at once your plan for

Service Station } .....  
Agency } .....  
Dealer } .....

Name.....

Address.....

City.....

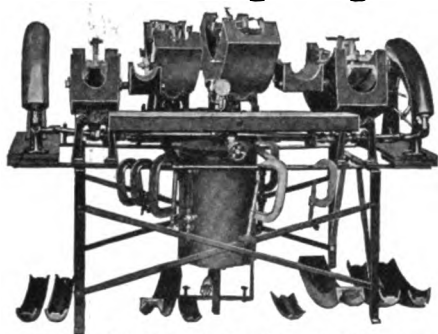
State.....



**STORAGE BATTERIES**  
with the machine-pasted plates are sold on a 15 Months Guaranteed Adjustment Plan.



## Vulcanizing With a Vanderpool Vulcanizer Brings Big Profits



3 Cavity Combination Vanderpool Vulcanizer

Here is an exceptional opportunity for Garages as well as Vulcanizing Companies to secure a vulcanizer that will turn out high-grade work at a small cost. The fuel saved alone, will pay for the machine in a short time—then you will "cash in" on your investment. This plant, the Vanderpool Vulcanizer, is meeting with enthusiastic approval of hundreds of satisfied users all over the country. Unsolicited testimonials from the various companies now using the "Vanderpool" testify to the dependability, efficiency and economy of this "Vulcanizing Wonder." One man writes that the "first month's profits paid for the plant." No experience needed—we teach you. It occupies very little floor space, and "once bought, you will never have to buy again."

Send in this ad with your name and we will mail catalogue and prices.

**VANDERPOOL COMPANY**

Box 33

SPRINGFIELD, OHIO

## Here's Your Chance for a Cleanup



The Only Way  
To Cleanup  
**AUTOMOBILE**  
**CURTAIN WINDOWS**

Removes Dirt, Scratches and Discolorations from the Celluloid (Mica or Isinglass) Windows in Front, Side and Back Curtains.

Retails at 50c the Can.

**A BIG PROFIT CLEAN-UP FOR YOU**

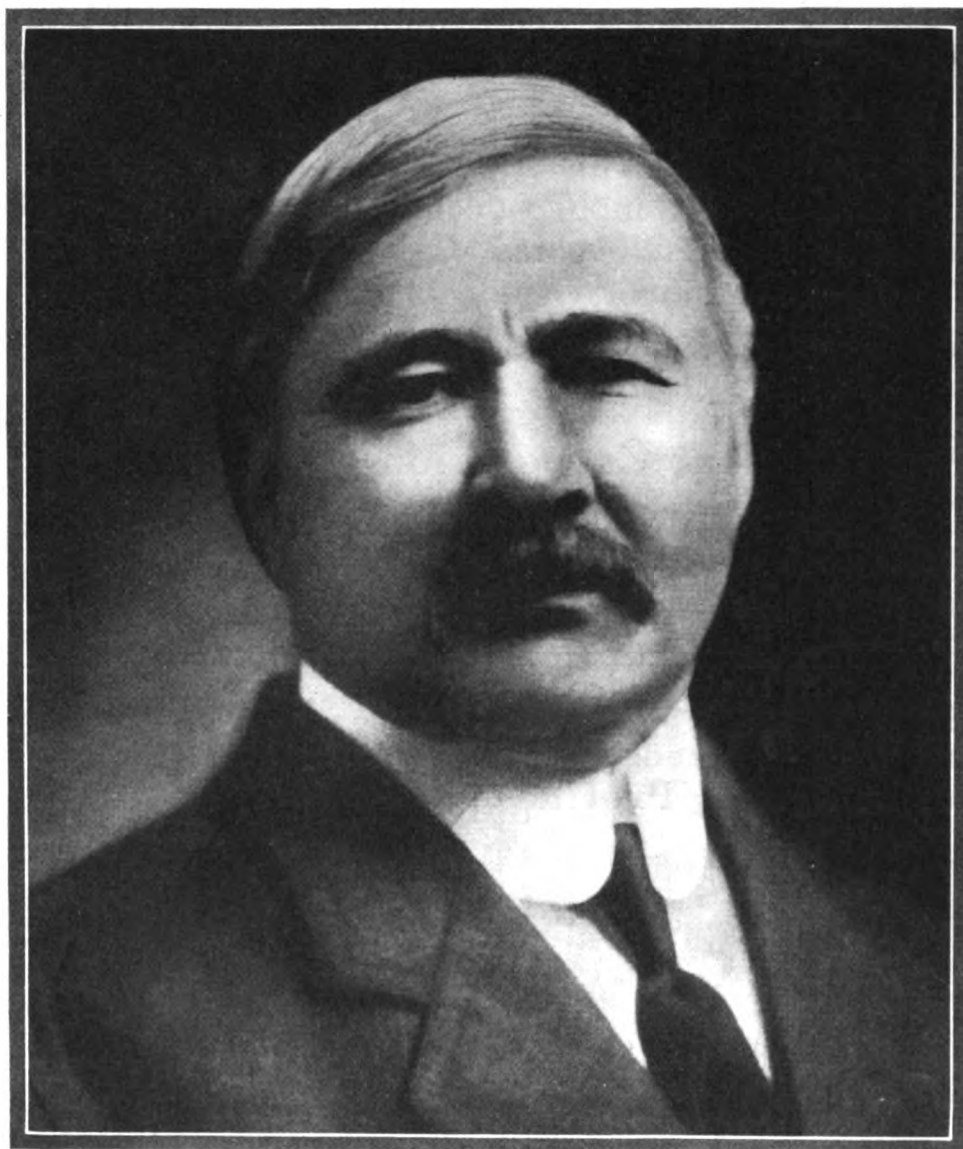
*Write at Once for Details*

**Celluloid Cleanser Company**

Tower Building, Chicago, Ills.



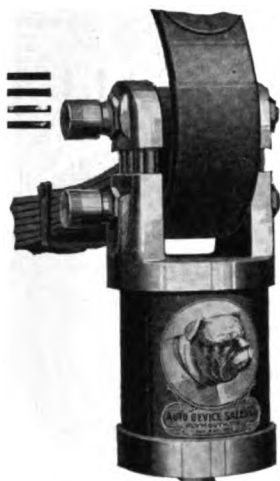
## Men Who Made the Auto Industry



ELWOOD HAYNES

**W**E PRESENT here the likeness of the oldest automobile manufacturer in America, the man to whom we as a nation are indebted for the gasoline automobile. He is still a young man, being but 56 years old. He was born in Portland, Ind., and at the age of 14 invented an apparatus for making oxygen gas and succeeded in melting brass, cast-iron and high carbon steel, using a furnace and blower of his own construction. At 21 he entered the Worcester Polytechnic Institute and graduated three years later, taking as his thesis "The Effect of Tungsten on Iron and Steel." He discovered Tungsten steel the same year, a metal now in common use.

Mr. Haynes became principal of the Portland High School in 1883. In 1885 he entered the Johns Hopkins University and took a post-graduate course in chemistry and biology, following which he taught science in the Eastern Indiana Normal School two years. He was next manager of the Portland Natural Gas & Oil Company, and during his connection with that company invented and perfected a small vapor thermostat. The year 1890 found Mr. Haynes identified with the Indiana Natural Gas & Oil Co. of Chicago in the capacity of field superintendent. His work necessitated a great deal of driving and it occurred to him that some better means of locomotion over the highways than the horse and carriage must be produced. He produced it—a horseless carriage doing 8 miles per hour, compared with 40 miles done by the latest Haynes car on a recent trans-continental run. The story from this time on reads like a romance. Elwood Haynes therefore gave the automobile to America and for this achievement is entitled to the honor Stephenson won with his locomotive and Fulton won with his steamboat.



## Bull Dog Shock Absorbers "Eat Up The Bumps"

The eight-rod principle of these shock absorbers overcomes "excessive wearing out" — prolongs the life of the unit and eliminates the side and end swing.

Made for  $\frac{3}{4}$  and semi-elliptic springs. The former size can also be applied to the platform style of spring such as is used on the Cadillac, Packard, etc. The semi-elliptic style is for the Hudson Super-Six, Chalmers, Allen, Moon, Chandler, etc.

### Excellent Dealer Opportunities

Satisfaction guaranteed for one year.

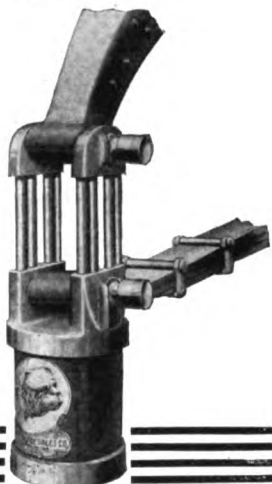
\$15 & \$20 per set—(two).

When ordering give name of model, width of rear spring, weight of car, and specify whether touring or roadster.

**Auto Device Sales Co.**  
PLYMOUTH, IND.

Chicago Office

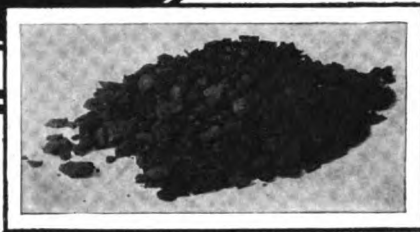
1240 Michigan Ave. CHICAGO



A Small Can  
or Two  
and Your  
Engine's  
New



USED EVERY  
THOUSAND MILES  
CURES YOUR  
ENGINE TRIALS



Result of One Cleaning—Comes Out in Chunks

## YOU WILL SELL MORE

There is a lot of money made through the sale of AD-EL-ITE Carbon Remover.

## HERE'S A REAL ONE

AD-EL-ITE Carbon Remover stops "knocking." Reduces consumption of gas and oil from  $12\frac{1}{2}$  to 25%. Makes a car run smoothly and makes hill climbing easy—saves expensive repair bills. Harms nothing but carbon.

Tell your trade how our Remover will cure their sick motors.

Effective advertising matter supplied and promotional work done for you.

### SPECIAL

Sufficient AD-EL-ITE Motor Carbon Remover to thoroughly clean an ordinary car twice will be sent for 85c, prepaid.

Send for special proposition.

AD-EL-ITE Carbon Remover is sold in convenient sizes from 1-16 to 1 gallon. A sure-fire repeater.

Address Dept. A.

## ADAMS & ELTING CO.

CHICAGO, 716-726 Washington Blvd.

TORONTO, 220 Yonge Street

BROOKLYN, 69-71 Washington Ave.



## CALCULAGRAPH YOUR REPAIR CHARGES AND PREVENT DISPUTES

Stamp all your repair and charge tickets with a CALCULAGRAPH, then if your customer complains, show him the CALCULAGRAPH ticket which contains a record of ELAPSED TIME (actual working time).

Satisfied customers will soon pay for the cost of a CALCULAGRAPH by a standardization of your repair charges.

Write for booklet illustrating a complete set of forms for a simple garage cost system.



**CALCULAGRAPH  
COMPANY**

1477 Jewelers Building  
New York City

# Live Wires in the Garage and Dealer Field

JOSEPH MAZER, PITTSBURGH, PA.

ONE of the youngest and most successful garagemen in the country is Joseph Mazer, proprietor of the William Penn Garage, Pittsburgh, Pa., who states that he does the largest garage business in that city and has one of the best fire-proof garage buildings in his part of the country.

On asking Mr. Mazer to account for his phenomenal success, he declared that extra and uniform courtesy to all customers was perhaps the largest factor in the up-building of his business, although he names three other prime considerations.

"I have a standard price for all customers, resident and tourist, although my tourist trade is the largest part of my business, especially in the summer. Winter business, however, is growing by leaps and bounds. I am on the Lincoln Highway and the rapid increase in long-distance touring gives me a steady increase in business from this source alone.

"My business is on as nearly a cash basis as possible. This gives me ready money with which to pay my bills, minimizes the detail of accounting, and helps generally.

"My service is right up near a 100 per cent efficiency basis and I keep open day and night—have thrown away the key—and the place is manned by competent help at all times.

"My location is A1."

Mr. Mazer was born in 1891, making him 26 years of age. His education was obtained in the Pittsburgh Public Schools, after which he was engaged for three years in the taxi business. He started in the garage business in 1915.

Progressive, energetic, aggressive and methodical, the subject of this sketch has made an unusual record for himself thus far. He has a big future before him. He is a good organization booster, a member of the A. A. G. O. in good standing, and a regular reader of the AMERICAN GARAGE AND AUTO DEALER.



## An Interstate Commerce Case.

In its annual report the Interstate Commerce Commission notes a suit against the Wisconsin Auto Sales Co., and Orton Collins for filing false claims, on account of damage to an automobile body. The auto body was damaged so that repairs to it cost \$15.75. Mr. Collins filed a claim for \$100, which he supported with two false invoices from the companies which had done the repairing. The freight charges amounted to about \$5. The corporation was fined \$500 and Collins \$200 for the transaction.

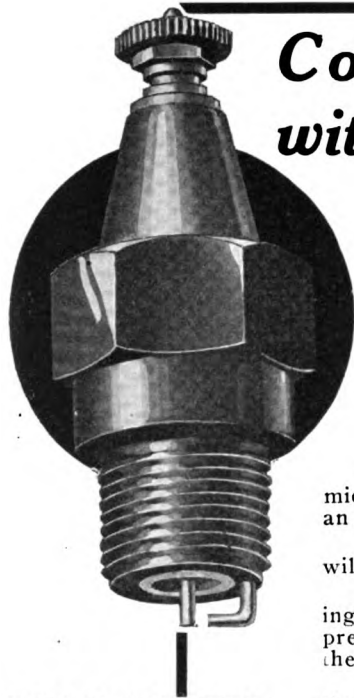
## Smoking Regulation in D. C.

Persons in the District of Columbia who smoke while in a gasoline operated automobile apparently are subject to arrest under this police rule:

"Smoking shall not be permitted in any garage, station, machine or repair shop where gasoline is used or kept, or within ten feet of any container of gasoline in the open air." The assistant corporation counsel however says the law is not applicable to automobiles, but is intended to safeguard the handling of the fluid.

## Lien Law for Kansas.

President W. H. Imes and Secretary Kenyon Riddle and the other officers of the Automobile Trade Association of Kansas are pushing the Kimball garage lien bill very strongly and hope to get it through the Kansas legislature before adjournment. This bill is a duplicate of the New Jersey lien law. The association and trade generally are opposing the Schoch bill for the licensing of auto mechanics and giving garage owners and mechanics a lien on cars they repair, which lien must be filed within 30 days.



## Could You sell a plug with so many talking points?

The ANSWER Spark Plug is of **entirely different** construction from any other on the market. You can **easily** convince any motorist of its superiority. And after the plug is sold it will give that excellent degree of spark plug performance that **every** motorist desires.

Look at the construction of the ANSWER.

*The* **ANSWER**  
SPARK PLUG

It is the **only** plug insulated from end to end with sheets of mica. This mica is wrapped on the inside of the shell and is 3/32 of an inch thick.

Short circuiting is impossible; oil **cannot** leak through; carbon will **not** accumulate; breakage is **impossible**.

The ANSWER is a one-piece plug. It needs no gaskets or bushings to hold it together. There are **no** joints through which compression can leak. This feature means **more power**—always—in the engine.

Handling the ANSWER gives you a long profit—and assures the motorist of a perfect spark plug. Our definite guarantee protects you.

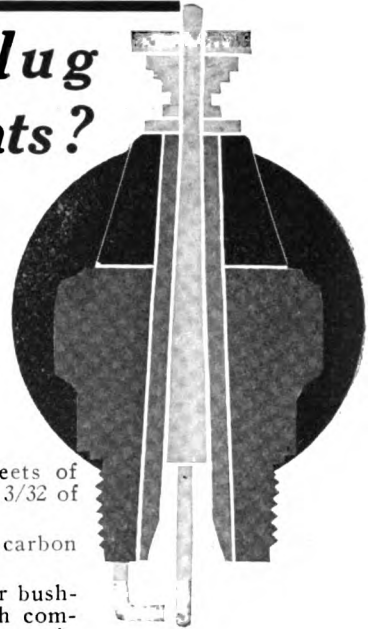
**We help you sell ANSWER Plugs. We are advertising them to motorists.**

**Price \$1. Ford Special—75 Cents.**

*Write for discounts so that you can place your order for the Spring business.*

**HILBORN COMPANY, Inc., 531 Canal Street, New York City**

**GUARANTEED**  
to give perfect service  
for a minimum of  
**10,000 MILES**



The  
**WILLARD**  
SUPER-HEATER

**Seven Miles  
More to a  
Gallon of Gas**

That's what the Willard Super-Heater will give on a Ford. Intensely practical—can be attached in ten minutes. Outlast an automobile.

Through the introduction of superheated air into the standard Ford carburetor, by the WILLARD SUPER-HEATER, the gasoline is completely vaporized, securing the full efficiency from the gas and requiring less amount per charge; consequently more mileage per gallon.

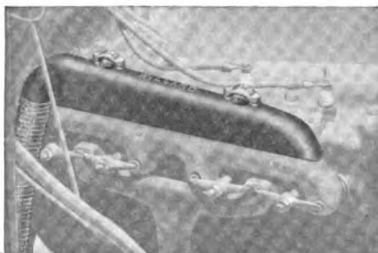
**Good in Any Weather  
Indispensable in Cold Weather**

**DEALERS:**—The high price of gasoline makes the Willard Super-Heater a necessity. Every Ford owner is interested—every Ford owner a live prospect.

Ask our Sales Department about our Agency proposition for open territory.

**Retail Price \$5.00**

**Willard Company**  
South Bend Indiana



**"In the  
days of real sport"**

**Be a boy again—get that  
"coasting sensation" with**

**W @ C**  
**the original Double Arm  
SHOCK ABSORBER**



W. & C. Equipment take the jolt out of winter driving.

As only a few choice territories are still available for assignment, reliable dealers should write or wire for particulars immediately.

**Phillip H. Webber & Co.**  
Hoopeston, Ill.



# The A.A.G.O. and its Activities

## Co-operation Between A. A. A. and A. A. G. O.

James A. Hemstreet, manager of the Touring Bureau, A. A. A., New York City, addressed the A. A. G. O. convention and spent several hours at the headquarters looking into our plans for benefiting and building up the garage and retail auto trade. It was agreed between him and the A. A. G. O. officials that the closest co-operation between the two organizations should prevail and plans are now under way with that end in view.

Mr. Hemstreet made the valuable suggestion that the A. A. G. O. signs on the outside of garages should be in two colors, yellow and red. The yellow should signify to tourists that the scale of price applicable to cities of 10,000 and over prevail there and the red sign to towns with less than 10,000 population. It was also suggested that population should not be the determining factor in the case, but that all the facts which enter into the question of operative cost, grade of service, etc., should be considered. Details of the two-color plan are now being worked out.

Mr. Hemstreet, as well as General Manager Reeves of the National Automobile Chamber of Commerce, who was also a caller during convention week, seemed to be quite enthusiastic over the work the A. A. G. O. is doing and the way in which it is doing it.

## The Jobbers and the A. A. G. O.

The relations of the jobber as a whole with the A. A. G. O. should be of the friendliest character and up to the present time there has developed no real cause for friction. They have a magnificent organization in the N. A. A. A. J., which is doing a great deal of valuable work for its members. Commissioner Webster and his office staff are highly efficient and the convention held in Chicago during the week preceding the auto show was largely attended. Officers were elected as follows:

President, Chas. A. Faeth, Kansas City.

Vice-president, E. C. Graham, Washington, D. C.

Chairman of board, P. H. Lyon, San Francisco.

Vice-chairman of board, Wm. Sparks, Jackson, Mich.

Directors—one year—Chas. E. Faeth, Missouri; Franklin Mayo, Illinois; G. N. Baughman, Florida; J. M. Bloch, Indiana; A. M. Moody, Massachusetts; C. E. Scott, Texas.

Directors—two years—E. C. Graham, Washington; W. W. Low, Illinois; G. N. Shafer, New York; F. B. Caswell, Ohio;

## NATIONAL HEADQUARTERS

58 W. JACKSON BLVD., CHICAGO

Telephone Harrison 5672

Branch Offices, New York and Detroit



### OFFICERS 1916-17

E. A. DeLAURELLE, Pres., Milwaukee, Wis.  
P. M. KIMBALL, 1st Vice Pres., Parsons, Kan.  
M. J. LAPORTE, 2nd Vice Pres., Holyoke, Mass.  
E. A. QUERINJEAN, 3rd Vice Pres., Colina, O.  
J. H. EARLE, 4th Vice Pres., Anderson, S. C.  
C. M. CARR, Secretary-Treasurer, Chicago  
C. C. BOMBAUGH, General Attorney, Chicago  
C. F. MARCHEL, Dir. of Organization, Chicago  
MATTHEW WHITE, Insurance Comr., Chicago

### DEPARTMENT OF BUREAUS

Organization Collections Publicity Insurance  
Employment Mechanical Legal Sales  
Account'g. Cost Find'g Purchasing Information

C. E. Jackson, Pennsylvania; G. M. MacWilliam, Canada.

Directors—three years—C. F. Wright, Oregon; Wm. Sparks, Michigan; P. H. Lyon, California; W. K. Norris, Missouri; S. F. Beech, Illinois; R. R. Englehart, Iowa.

"Better Business" is the jobbers' slogan, and to the extent that this sentiment is practiced and its influence extended to the retailers it will receive the hearty approbation of the A. A. G. O.

"Unfair Prices," "Pirate Goods," "Standardizing Catalogues," "Dated Price Lists," "The Accepted Jobbers' List" and "Manufacturers Confining Sales Exclusively to Jobbers" were the topics discussed.

The subject of most vital interest to garagemen and retail accessory dealers, namely, the sale of goods by jobbers to consumers who are the natural customers of the retailers, was not given the attention it deserves, as it is the one large sore spot in the relations between jobbers and retailers.

Hot Springs, Va., was chosen as the next meeting place and June 4-6 the date selected.

## Local Associations.

Local associations of garagemen, repairmen, auto dealers and auto shop workers (the latter by themselves) may be organized under the direction of the A. A. G. O., either by mail or a personal organizer. A standard form of constitution and by-laws and other information with reference to how to proceed, cost of creating and maintaining an organization, benefits, etc., will be gladly sent on request.

Organize, brothers, and know each other better; work with each other, and put yourselves in a position to secure the benefits of the A. A. G. O.'s national work. This

journal is your organ, mouthpiece and champion, and you can come into your own only by joining hands and working unitedly and continuously together.

## Co-operative or Syndicate Buying.

Some manufacturers have offered inducements to the A. A. G. O. to go into co-operative or syndicate buying for its members, but such offers have been rejected, as this organization is not a commercial, merchandising concern and cannot become such under its not-for-profit charter issued by the state of Illinois.

Some of the local and state associations whose members are members of the A. A. G. O. buy co-operatively, but this is done, so far as we can learn, in localities and sections where jobbers do retailing and in this and other ways disregard the retailers' just rights. It is not the province of the A. A. G. O. to interfere with the government and activities of local and state bodies, but rather to assist and make more productive of good the efforts they may put forth.

National Headquarters wants the A. A. G. O. membership everywhere to receive the most favorable consideration in matter of prices and other accommodations, but the limit of its assistance in these matters will be in obtaining for members price information and other helps as a part of its retailers' "more and better business" campaign in their behalf. Any notion that anybody may have that the A. A. G. O. ever has contemplated or now contemplates buying and selling merchandise is entirely erroneous.

## Legislation in Many States.

In many states garage lien laws are pending and in others bills are about to be introduced. In Kansas, Oklahoma and New Mexico the New Jersey law has been introduced without modification, and the AMERICAN GARAGE AND AUTO DEALER has advised to the effect that the chances for its passage in those states are excellent. Press comment on the bill is favorable in all three states. The draft of this bill was obtained from A. A. G. O. headquarters.

In Wisconsin a bill is ready to be introduced which has been prepared under the direction of Attorney Nathan M. Stein and the Wisconsin Garagemen's Association. It strengthens and extends the provisions of the present law. In Iowa a bill has been prepared by Attorney E. V. Cox of Des Moines and is being supported by the two Iowa state associations. It proceeds along original lines and is said to be adequate in its provisions. In Michigan the present excellent law is to be

An  
Electric  
Sign



Will  
Keep You  
Busy

## Mr. Garage Owner, They Can't Lose You, If—

you install a compelling, trade-attracting Federal Electric Sign on the front of your garage.

You want more business — this is one of the best and cheapest ways to get it. Your Electric Sign is your trade mark. It impresses *your* garage indelibly on the automobile owner. It is the surest, quickest and the most economical means of keeping before the public.

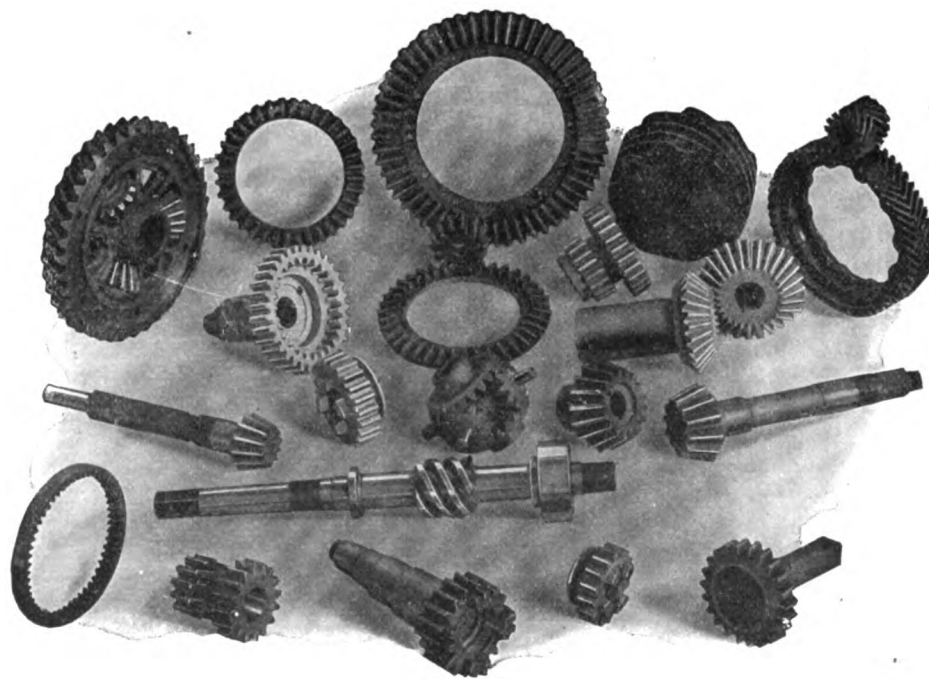
Let us show you how cheaply and how effectively we can carry out your ideas. Address Department S.

**COMMONWEALTH EDISON COMPANY**  
Edison Building, 72 West Adams Street, CHICAGO

## WILLIAM GANSCHOW COMPANY

GEARS for  
Automobiles  
Our Specialty

**Y**OU DO NOT HAVE TO LAY UP YOUR CAR and send to the manufacturers for repair parts or replace gears, as we are prepared to furnish promptly transmission, differential or timing gears, and any other part made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or Foreign manufacture. Workmanship and quality guaranteed.



1002 WEST WASHINGTON BLVD.

- CHICAGO, ILLINOIS

strengthened by amendment, and in New York the Kaiser bill is being pushed. There is something doing in nearly all of the states whose law-making bodies are in session, and these efforts should receive the support of the united garage, repair and retail auto supply trade in the respective jurisdictions.

In Illinois the work is proceeding under the wise leadership of H. E. Halbert, and the bill to be passed will receive the support of those who opposed as well as those who supported the bill urged at the previous session of the legislature, reinforced by new forces that have since come into the field.

States needing assistance in preparing bills or planning campaigns of action are invited to communicate with A. A. G. O. Headquarters.

### A Great Convention.

The program of the A. A. G. O. convention was the most constructive and helpful one I have listened to in all of the years I have attended trade and salesmen conventions. I want to compliment the officers of your association who are responsible for it. —E. M. Reimiller, Firestone Tire Co.

"If I had to pay all the expenses of the A. A. G. O. convention out of my own pocket, considering the big values in information and suggestion received while in attendance, I will still feel that I was winner," said Charles Marcher, former auto salesman and now garage trade booster.

### Garage Maximum Prices to Tourist.

The maximum prices which A. A. G. O. garagemen may charge automobile tourists are said to be too high, the fact that they are maximum being overlooked. Many garagemen charge less, according as the local conditions may dictate. The maximum list provides a lid against extortion and a garageman cannot charge in excess of the maximum list and remain an A. A. G. O. member in good standing.

The list, for instance, provides a charge of \$1.00 an hour for the services of a first-class mechanic on expert repair work. This is too high for ordinary localities and the charge made is usually less, but it is entirely too low for the extortioner who is laying for the tourist and soaks him \$3.00 to \$5.00—on the theory that he will never have that car owner for a customer again anyway, so why not rob him. Get the point?—*Philadelphia North American*.

We are very much pleased with the A. A. G. O. Collection Service. Cut off Frank G—t, John F—r, and Harry M—n from the list; they have paid.—Long & Miller, Sturgis, Mich.

# A Successful Convention

**A. A. G. O. Forces Gather During Auto Show and Enjoy Big Educational Program—Helpful Addresses and Moving Pictures—Westlake and Newman Banquet Stars**

### The Convention.

**T**HE second annual convention of the American Association of Garage

Owners constituted a notable get-together meeting in Chicago during show week of association and business enthusiasts identified with the automobile and garage trade. The sessions were held in the ballroom of the Auditorium hotel and a program of educational, inspirational and constructive trade values which won the highest encomiums of those in attendance and the casual looker-on, was carried through, despite the fact that the attendance was not as large as could be wished, due to counter attractions of dealers' meetings and dinners given by car manufacturers and the first-of-the-month routine business demands which kept many garagemen and dealers at home, and the all too prevalent feeling among the trade that association conventions are gabfests rather than practical aids to association service activities. Lack in numbers was made up in intensity of interest, however, and the unanimous feeling was that "the message

of the convention would be far-reaching and beneficial beyond any possible estimate," to use the phrase of a Pennsylvania garageman.

President De Laruelle made an exceptionally effective presiding officer and ruled the convention with dignity, fairness, and success, dispatching business with the effectiveness of an old veteran, yet with a genial and persuasive manner that lent encouragement and kindly direction to every effort.

The program, with minor changes to meet unforeseen developments, was as follows:

### Thursday, February 1—10 A. M.

Address, "Welcome to Chicago," Mayor William Hale Thompson.

Address, "Illinois," Governor Frank O. Lowden.

Address, "A Word to Garagemen," Samuel A. Miles, Manager Chicago and New York Auto Shows.

President's Address, "Organization," E. A. De Laruelle, Milwaukee, President A. A. G. O.

Address, "How to Increase Car Sales," P. A. Smith, Sales Organization, Willys-Overland, Inc.

Report, "A Review of the Year," Secretary C. M. Carr, Chicago.

### Thursday, February 1—2 P. M.

Address, "The Jobber and the Value of the Service He Renders," William W. Webster, Commissioner National Association of Automobile Accessory Jobbers.

Moving Picture Film, "The Willys-Knight Motor and Car," Henry H. Hower, Manager Sales Department, Willys-Overland, Inc.

Address and Demonstration, "Magnetic Gear Shifts," W. C. McCarrell, Chief Engineer Cutler-Hammer Mfg. Co.

Address, "The Automobile Industry and the Garageman and Dealer's Part in It," Alfred Reeves, General Manager National Automobile Chamber of Commerce.

Address, "Standardization of Service as a Feature of Association Work," R. Whitely Plummer, Assistant to President, Spring Nut Lock Co.

### Thursday, February 1—7:30 P. M.

Address, "Profitable Merchandising for Garagemen and Keeping Business at Home," E. B. Moon, Successful Country Merchant

and Community Development Expert, Staff of Farmers' Review.

Discussion, "Tire Sales and Tire Profits," led by J. E. Duffield, Manager Tire Dept., Brunswick-Balke-Collender Co.

Discussion, "Lien Laws," led by Nathan M. Stein, Milwaukee.

### Friday, February 2—10 A. M.

Moving Picture Film and Address, "The Link, or the Selling of a Tire," E. M. Reimiller, Advertising Manager Firestone Tire & Rubber Co.

Address, "Garage Business and the Tourist Trade," James A. Hemstreet, Manager Touring Bureau, American Automobile Association, New York City.

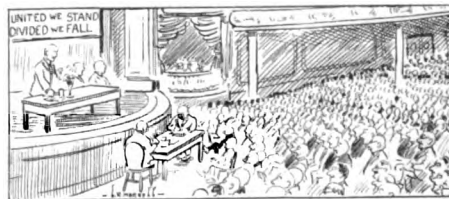
Discussion, "Why Garagemen Should Get Into the Truck Game," led by President E. A. De Laruelle.

Address, "Up-to-the-Minute Lubricating," C. Howard Williams, Sales Manager Sexton Oil Co.

### Friday, February 2—2 P. M.

Address, "Electric Starting and Lighting Systems," O. A. Witte, Chief Engineer American Bureau of Engineering.

Address, Illustrated with Stereopticon



# Did Samson Have a "Hump-Back" Mr. Repairman and Dealer?

Don't go wrong on your spring replacements.

Springs that are "humped-back" will *not* insure you against spring troubles forever.

## REASON IT OUT YOURSELVES

You want flexible, easy-riding, quality springs, and springs with "true lines" in keeping with the rest of the car.

*These qualifications are found in*

## HIGGINS QUALITY SPRINGS FOR REPLACEMENTS



Made without center bolt — *bolless* — *strongest* where the greatest *stress* is brought to bear.

Lubricated — No squeak — Life saver to tires.

No malleable attachments at center to make a *stiff* riding spring or to cause steel to check and break spring *off* center.

With Higgins Quality Springs you use the same size clips. Not necessary to throw away good clips and buy a larger size to accommodate the extra thickness of spring at center.

### Same Guarantee at Any Point on the Spring

**Ask Your Supply House** for Higgins Quality Springs—if they do not handle them, write us and we will see that you are supplied. Be sure and ask for our catalog, which shows over 500 different styles and kinds of Quality Springs.

**HIGGINS SPRING & AXLE COMPANY, Racine, Wis.**

# Do away with all CARBON troubles forever

**A Success for the Dealer—  
A Success with the Car Owner—**

There's a *real* demand for a *real* carbon remover and car owners are quick to realize the value



We need more live dealers to help us distribute. We do not ask our dealers to buy our goods until they have felt the demand, so we have a special co-operative selling proposition to submit to you.

The HART-BELL CARBON REMOVER is a device for introducing live steam into the cylinders of the motor. Live steam is the best agency for loosening carbon. The carbon is blown out through the exhaust while the motor is running. The HART-BELL CARBON REMOVER is quickly and permanently attached and can be used as often as desired. Sells for \$5.00 and there is good profit for you.

Write at once for the selling plan.

**UTILITY PRODUCTS CO.**  
823 Times Bldg. New York City  
or  
**MOTOR EQUIPMENT CO.**  
1436-38 S. Michigan Ave. Chicago, Ill.



**Price \$5.00**

The HART-BELL is absolutely guaranteed to you and to car owners

**Can be  
put on  
any car**



*"Ask the man who's used it."*

## CLEANS AND POLISHES AUTOMOBILES

The only known polisher and cleaner that will remove Road Oil and Tar.

No hard rubbing—apply, leave it set a while, wipe off.

Preserves, cleans and polishes the varnish.

Dealers will find a ready sale for POLAC.

Order a sample can and be convinced.

**Motor Equipment Company**

1438 Michigan Avenue  
Chicago, Ills.



Slides, "Taking the Book out of Book-keeping and Simplified Cost Finding," Carl H. Fast, Inventor of the Fast Self-Figuring Devices.

Address, "Cutting the Cost of Insurance," M. J. Grogan, Insurance Underwriter A. A. G. O.

Discussion, "How to Get A. A. G. O. Insurance Benefits," led by Matthew White, Insurance Commissioner A. A. G. O.

Address, "The Garageman and the Law," C. C. Bombaugh, General Attorney A. A. G. O. and Law Editor American Garage and Auto Dealer.

Quiz, "How Can I Operate My Shop to the Greatest Profit to Myself and Satisfaction to My Customer?" led by E. B. Hinrichsen, Mechanical Editor American Garage and Auto Dealer.

Discussion, "The Gasoline Fight: How to Get Down the Cost of Motor Fuel," led by Secretary C. M. Carr.

Mayor Thompson was tied up in a budget conference with a council committee and sent Harry F. Atwood, attorney for the Board of Local Improvement and well known lyceum orator, whose welcome was genuine and suggestions were practical and helpful. Governor Lowden deputized Hon. Henry R. Rathbone, president of the Hamilton Club, to extend the greetings of Illinois, and Mr. Webster of the Automobile Jobbers' Association had a strike on his hands to settle and sent a phone message in the hope of personally appearing later.

The moving picture events, notwithstanding the big values inhering in the addresses and discussions, constituted the feature attractions of the program. The hotel, city authorities and moving picture operating firm under contract to project the pictures got into a jam, necessitating the transfer of operations to a nearby hall. This was done with ease and order and the pictures were shown to the entire satisfaction of the crowd and, as in every other untoward feature of the meeting, to use the phrase of a Wisconsin dealer, "wherever defeat was impending it was promptly and effectively turned into victory."

At the closing session resolutions were adopted authorizing Secretary Carr to send the following message to Congressman Scott Ferris and Senator James D. Phelan, chairmen of the House and Senate committees on public lands, at Washington:

"The representation of sixty thousand garagemen, auto dealers, auto repair men and supply men in convention assembled, most respectfully and urgently call upon Congress to pass bills now before it, designed to throw open to general leasing,

under safeguards against monopoly, the five million acres of oil bearing land now being withheld from production. We look to you and to Congress for relief from the excessive cost of gasoline. As servants of over three million automobile owners we protest against present conditions."

The action of the A. A. G. O. executive authorities in establishing and putting into effect maximum prices for storage and repairs applicable to tourist trade and in devising a cost-finding system for garages the adoption of which will tend to establish minimum prices for all work and service and the elimination of cut-rate evil, was unanimously endorsed.

Resolutions were adopted endorsing the Stephens Price-Maintenance Bill, Good Roads, Adequate Garage Lien

Laws, Garage Fraud Laws, Co-operation with the Manufacturers and Jobbers when consistent with the just rights of the retail and service branch of the trade represented by this Association, commending the effective service of the American Garage and Auto Dealer, our official organ, for its whole-hearted and efficient support of the A. A. G. O. cause, praise for the effective manner in which the collection, legal and mechanical advice departments of our organization are being conducted, and finally a general endorsement of the excellent work done by our officers and executive members in creating new activities as circumstances warranted and exercising a protective surveillance over our craft interests that has already resulted in untold benefits.

## The Banquet

The banquet was a "scream." E. G. Westlake, premier toastmaster in the automobile world and motor editor of the Chicago Evening Post, presided at the head of an E-shaped string of tables. His introduction of the speakers was characteristic and his alliterations and references to motor trade events, past and present, were replete with wit and wisdom carrying inimitable Westlakian flavor.

Harry Newman, said to be one of the three greatest motor car merchants in the world, told of his advent into the sales branch of the auto industry via the garage business at Washington, Pa., where his boss bought cars as a pastime and was the car salesman's "easy mark," leaving the important detail of the disposition of the cars to him. At times there were 300 to 400 cars on hand, so Newman organized a sales crew and took out cars in droves much like western horses were sold in earlier days. They got money for the cars from the townspeople and farmers round about or anything else of value that could be converted into money at once or later, including growing crops that could not be harvested until months afterwards. Peddling gas-buggies like ponies and being hard pushed to make volume of business, through sheer force of the necessities of the case, Newman said, gave him an equipment that shot him into the dizzy white lights of Michigan boulevard, Chicago, double-quick, and here he has since kept everybody guessing as to what he would do next, including the electric signboard companies and advertising agencies.

Harry said he was sorely disappointed in not finding 1,000 garagemen present at

the banquet, as he had fully expected to so impress the gathering by his speech that he would without difficulty dispose of his entire present allotment of cars, but as only 500 were before him, it would be a 50-50 proposition with the other 50 to go to the bunch on the next stop in the circuit where he would deliver the same speech.

H. J. Staebler, district manager of the Reo organization, also recounted his garage and repair shop experience in an Ohio town, the chief event of which was the hurry-up repairing of one of the old three-wheel gas geezers whose approach could be heard over in the next county. The owner of the car was to be back next day, and meanwhile Staebler wanted to get into a local parade and show off the car, himself and his two best girls. He did so. Instead of the time schedule working out right, the car's engine went cold and other things happened at the critical moment and young Staebler found there was nothing else to

do but to throw up his hands and run. He declared that he was running yet.

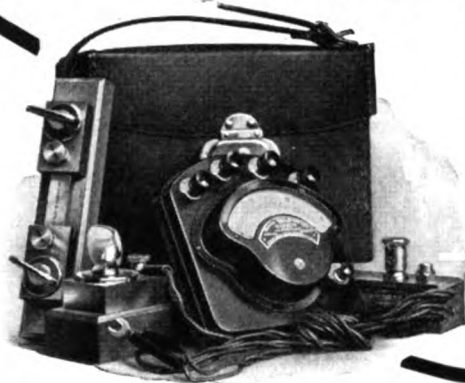
James A. Hemstreet of the A. A. A. gave interesting reminiscences of the auto industry, connecting up the incidents mentioned by the other speakers with events in his own motoring experiences as a three A touring director.

Mr. Westlake showed himself a veteran in the auto game by telling of the first auto race ever pulled off, which he covered for his paper, and of being one of the men who put the first pneumatic tire on any sort of a vehicle, in this case an old big-wheel steel Pope bicycle.

His experience dates from the beginning in automobiles and will continue to the end as newspaper man and toastmaster.



## Don't Send Your Customers to Another Garage!



If you cannot repair electric starting and lighting equipment intelligently, your customer will go elsewhere for this service. He will take the rest of his trade with him. There is more money in electrical repairs than in any other department of the garage business. The demand is enormously increasing.

# Weston

Model 280  
**GARAGE TESTING INSTRUMENT**

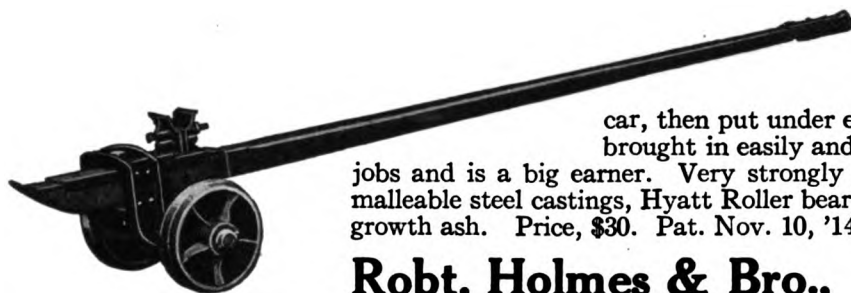
is the best, the most reliable and therefore the cheapest electrical equipment for you. It enables you to determine promptly and accurately the condition of the electrical equipment of any automobile, just where the trouble is and just how to remedy it.

Write for our *Special Proposition*.

**Weston Electrical Instrument Co., 30 Weston Ave., Newark, N.J.**

23 Branch Offices in the Larger Cities

## Hundreds of Garagemen Use the Holmes Wrecking Truck



It is just what they need for bringing in wrecked cars. The truck is used as lever to raise the car, then put under either axle and any size car can be brought in easily and quickly. Brings lots of profitable jobs and is a big earner. Very strongly made, having frame and wheels of malleable steel castings, Hyatt Roller bearings for wheels, and tongue of second growth ash. Price, \$30. Pat. Nov. 10, '14. Discounts to dealers and garages.

**Robt. Holmes & Bro., - Danville, Ill.**



Front View

## Why Not Be Sure

that every part of the engine; chassis, or body of the car you make will **stay together** until taken apart?

## Spring Nut Locks

are the simplest, surest, safest device to **positively lock** any nut on any bolt. Resists all vibrations. Cannot harm threads. Easily applied. Released whenever desired.

### Cheapest and Best

Manufacturers, Jobbers, Garage Men, Repair Men and all Dealers should write for prices on sizes now available. Orders filled in rotation. All sizes by January 1st.

**Spring Nut Lock Company**  
643 Transportation Bldg.  
Chicago



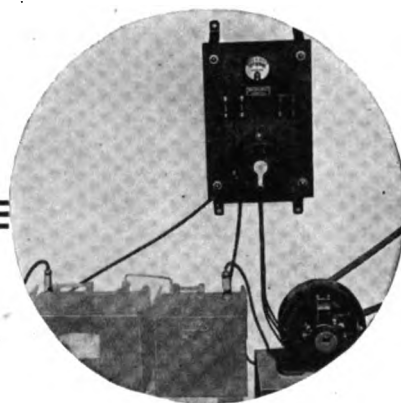
Rear View

Bigger

Better

Profits

Service



## MAIN Battery Chargers

Put your battery charging business on a profit making basis. In charging batteries from your lighting circuit most of your profit is consumed in the resistance necessary to reduce the voltage.

MAIN Battery Chargers eliminate this waste—make you independent of your lighting circuit—**increase your profits**—and render a valuable service to your customers.

The Main Battery Charger generates its own electricity and can be driven by any power in use, with little or no operating expense, making your receipts for battery charging almost net profit.

Price \$55.00

Prompt Delivery

**MAIN ELECTRIC MFG. CO.**  
PITTSBURGH, PA.

# Alfred Reeves, General Manager National Automobile Chamber of Commerce, to the Convention of American Association of Garage Owners

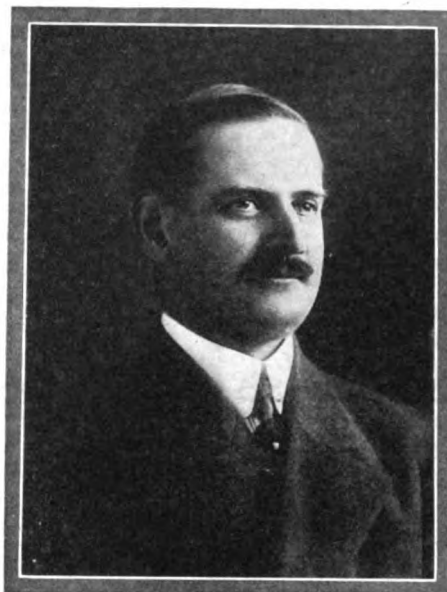
IT IS unfortunate that plans made some time ago requiring me to leave Washington to visit the dealers on the coast prevents me from participating in this gathering and extending in person the greetings of the members of the National Automobile Chamber of Commerce who are intensely interested in your progress and prosperity. The car manufacturer appreciates that the best dealer is the one who is making money, and all his efforts are toward directing the dealer into more prosperous channels, because in no other way can the automobile business maintain its present leadership. There must be prosperity for those who distribute as well as those who manufacture in an industry that supplied the public a billion dollars' worth of machines during 1916.

We hear more and more of the excellent work accomplished by the co-operation of dealers in this organization when being directed by such men as Mr. DeLaruelle, Mr. Carr, Mr. White, Mr. Marcher and their associates.

## Only the Big Units Count.

It is well for garage owners to co-operate in obtaining advantages for themselves with the resulting good that always comes to their customers. In this big and busy country of ours, the individual worker is becoming of less and less importance. The din of the battle of business drowns the efforts of all but the big units of organization.

Co-operative organization work means that one must give and take to obtain a



Alfred Reeves.

common end for the good of all. He gets most from co-operation who is the best co-operator. Co-operation means give and take, but does not mean to give one and take ten.

Not alone can dealers and garage owners obtain many benefits from membership in a national organization like the American Association of Garage Owners, but in local affairs they can work together for greater benefits. Keep in mind that the prosperity of a business is reflected upon everyone who is in it. It is

mighty fortunate for any industry when competitors can eat together as they will at your banquet without eating each other.

## Our Industry Not Overdone.

Occasionally you hear that the automobile business is overdone. Such statements have been made almost continuously for the past five years. I note, however, that trade keeps increasing, dealers become more prosperous and more and more people buy and use automobiles, although the competition is strong, as evidenced by failure of 400 automobile companies in five years.

There are almost 3,500,000 cars registered and in use in this country, last year's production being 1,583,000, with not less than 1,750,000 cars scheduled for this year. Production will continue because of the service rendered by the motor car and because the automobile manufacturer is keenly appreciative of the good that comes from the judicious mixing of the important six M's of business—Men, Materials, Money, Machinery, Methods, and Marketing.

## Congratulations on Progress Attained.

I congratulate this organization and its officials and members upon the progress it is making and the good that it is doing. I congratulate them upon being identified with a growing industry like the making and marketing of motor cars and I extend to them on behalf of the automobile manufacturers the very best wishes for continued success in their various lines of endeavor.

Among the other speakers were A. J. Meyer, R. W. Plummer, C. M. Carr, C. C. Bombaugh, E. M. Reimiller, A. P. Meng, C. H. Williams, M. J. Grogan, Matthew White, J. A. Wilkinson and R. P. Hogan.

The speaking was interspersed with popular songs and stories, and the evening closed by the lusty singing of "The Star Spangled Banner," supplemented with ringing cheers for our President, Country, and Flag.

## Organized to Pass Lien Law.

The Oklahoma Garage and Repairmen's Association has been organized with Wm. Scott as president, F. H. Lemons treasurer and Sam Pledger secretary, all of Oklahoma City. The legislative committee includes John Prest, C. A. Kettering and Mr. Pledger, and they are organizing the state to put through the New Jersey lien law. The measure is known as H. B. No. 139.

Mr. Pledger writes: "We note in the

January number of the AMERICAN GARAGE AND AUTO DEALER, our official magazine, that the New Jersey law has been attacked. If we can get this law passed in our state, we will fight to the last ditch any attempt to have it declared unconstitutional."

## Congressman Ferris and the A. A. G. O. Gasoline Price-Lowering Campaign.

Hon. Scott Ferris, chairman of the House Committee on Public Lands at Washington, advised National Secretary Carr that he appreciated very much the invitation he received to address the A. A. G. O. convention in Chicago, but the pressure of public business would not permit him to leave the national capital. He added:

"At the present time there are something like five million acres of public lands underlain with oil. These lands have been withdrawn from entry. No drilling for oil can proceed on these areas under present conditions. The Southern Pacific Railway and

other companies occupy the lands adjoining the public land containing great quantities of oil. These private companies have gone ahead with drilling on their own adjoining lands, with the result that the oil underlying the public domain, in many instances, is being drained from underneath.

"The enactment of the general leasing bill favored by your Association would to a very large extent put a stop to this situation. Private capital, regulated by the strong arm of the government, would have an opportunity to lease these public lands for oil purposes, with the royalty therefrom running to the government, and strong regulations would guard against any monopoly.

"In this way the navy could be supplied with oil at a greatly reduced price; the competition would be lively between outside companies and those drilling on the public domain, and as a result prices would be forced down, gasoline prices would be lowered, and great good would flow therefrom on every hand."

# HY-WATT

## Profitable Sales Opportunities for "Live Wire" Dealers!

Would you like to act as our agents for HY-WATT Batteries in your territory?

Motorists everywhere are specifying HY-WATT batteries, because they are the cheapest, more serviceable and longer-lived.

HY-WATT Batteries have made good under the most severe tests of service.

HY-WATT batteries are in reality semi-dry, because they have more moisture than the ordinary round cell. For this reason and for their correctness of manufacture, they deliver twice the electrical energy under the same load as the ordinary round cell.

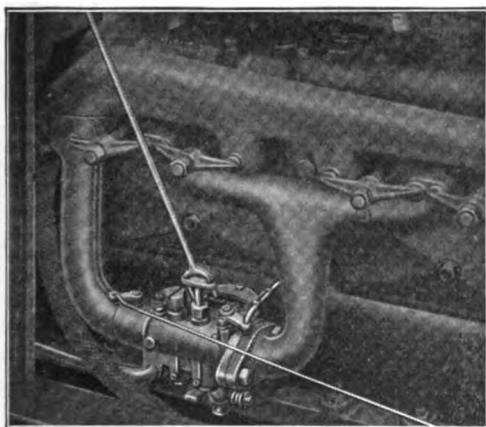
HY-WATT batteries are guaranteed absolutely waterproof and have only two points of connection irrespective of the capacities required. Write for quotations. We have some special introductory prices.

**The Cleveland Battery & Electric Co.**  
CLEVELAND, OHIO



## Model N Marvel Carburetor

Designed especially for Ford Cars. Fits right in place of regular installation, no changes whatsoever.



Model E Marvel Carburetors are standard on Buick, Olds, and Oakland

Model E Marvel Carburetors greatly improve Overland and Studebaker cars. Catalog on application.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retail for \$8.00 complete.

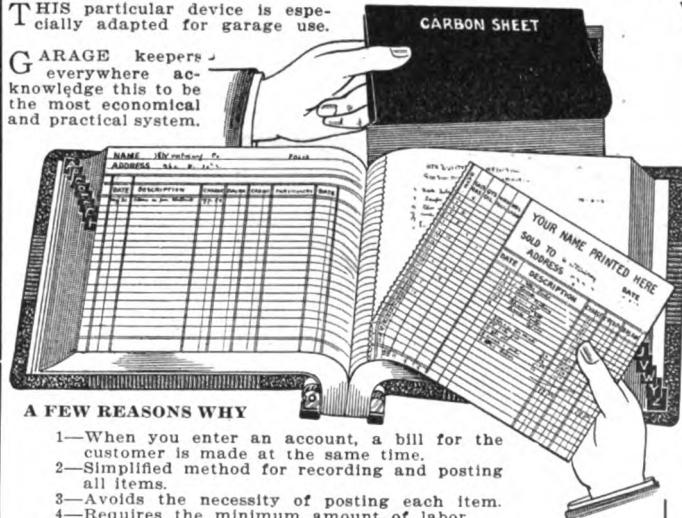
**MARVEL CARBURETOR COMPANY**  
FLINT, MICHIGAN, U. S. A.

## SAVE TIME AND MONEY

Our SPECIAL GARAGE Bookkeeping Plan Gives You the HIGHEST Possible EFFICIENCY

THIS particular device is especially adapted for garage use.

GARAGE keepers everywhere acknowledge this to be the most economical and practical system.



### A FEW REASONS WHY

- 1—When you enter an account, a bill for the customer is made at the same time.
- 2—Simplified method for recording and posting all items.
- 3—Avoids the necessity of posting each item.
- 4—Requires the minimum amount of labor.

This page is the customer's bill; the one underneath is your copy.

*Harton's Garage and Accounting Record is another new labor saving device we make. Ask about it.*  
SEND FOR DESCRIPTIVE FOLDER AND FULL PARTICULARS  
**THOMAS J. HARTON & CO., Inc.,** 212x Church St.  
NEW YORK  
*Loose Leaf Specialties*



# Auto Accessories and Garage Equipment

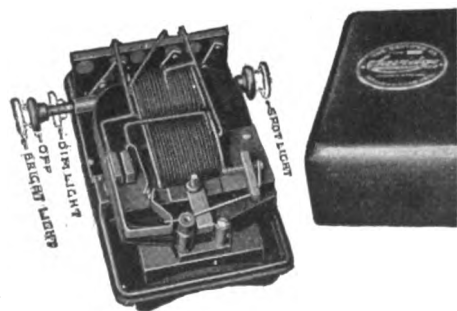
## Savidge Light Transformer.

A really successful accessory for "Ford" cars is the Savidge Light Transformer now being manufactured by The Savidge Company of Indianapolis.

Mr. Savidge has spent a great deal of time and money in inventing and perfecting an instrument that would really increase the Ford Lighting system to such a point where a steady driving light at all engine speeds is possible.



With the use of the Savidge Transformer a brilliant white light is obtained at all speeds from the lowest idling speed of the engine to the fastest it can run—not only that but by simply pressing a button you can dim your lights for city driving. Another important feature of this device is that it makes possible the use of a search-light without use of a storage battery. Simply press a button and the light from one headlight is transferred to the search-light. In a series of tests it has proved



that the installation of this instrument had no bad effect whatever on the magneto. The same watt lamps that are furnished as regular "Ford" equipment are used.

Recently a number of night pictures were taken at the Speedway in Indianapolis—first the regular "Ford" light was used, then another picture using the Savidge Transformer was taken. Both pictures were given the same exposure time. With the

"Ford" light the surrounding objects were just barely discernable with one yellow spot ahead—with the "Savidge" being used the whole surroundings were lighted up so that every detail could be seen.

The instrument is encased in a small, attractive enameled box and is easily installed, being attached to the steering wheel and in easy reach of the driver. Write the Savidge Company for particulars.

## A Novelty in Advertising.

A rather novel advertising device in which a motorcycle plays an important part has been attracting considerable attention along gasoline row recently.

The idea originated with the Imp Carbon



Chaser Corporation and as the result of this ingenuity their product has come in for considerable notice and talk among the trade.

The carbon chaser which they are exploiting comes in tablet form, and one tablet is used with each five gallons of gasoline to secure the desired results, to wit: Elimination of carbon deposit and automatically more uniform combustion and a greater engine efficiency. Incidentally quite a degree of economy is effected soon after their adoption, as the engine runs on a much lighter mixture. The Imp Carbon Chaser Corporation had the carbon chaser under test for eighteen months before placing it on the market. The manufacturer states that there is not the slightest danger of injury to the engine from its use.

## Repairing Goodyear Cord Tires.

"I am often asked about the repairing of Goodyear Cord Tires," says L. C. Rockhill, Manager Automobile Tire Department, The Goodyear Tire & Rubber Co. "Many motorists are wondering if the repairing of our cord tires is as

simple as the repairing of our fabric tires. One of the great advantages of our cord tires is the ease with which they can be repaired. We have found that this feature appeals strongly to motorists. Goodyear Cord Tires rarely need attention, as they have six to ten layers of strong cords, depending on the size of the tire, which offer reinforcement and strong resistance against injury. But when a tire injury requires attention, it is not necessary for a motorist to send the tire back to the factory. Any tire repairman can repair a cord tire just as he would a fabric tire, using regular fabric, without impairing the efficiency of the tire."

## Garage Battery Service.

Marmon Buick Sales Co. of Urbana, Ill., has adopted a plan in connection with the service department for the care of electric storage, batteries for lighting, starting and ignition purposes.

A postal card is mailed between the first and 15th of each month to the owners of all automobiles purchased from the company that are equipped with storage batteries.

The card calls attention to the necessity of regular inspection of the battery, either by the owner himself or the service department of the Marmon Buick Sales Co.

It is generally understood that neglect of the average owner to inspect this detail of his motor car equipment contributes very largely to the troubles of the service department and the owner himself. The regular inspection of the storage batteries will do away with many if not all of the troubles that frequently arise.



# Edison

Alkaline  
Lighting  
and  
Ignition  
Batteries

**Batteries and Supplies**  
carried in Stock at our

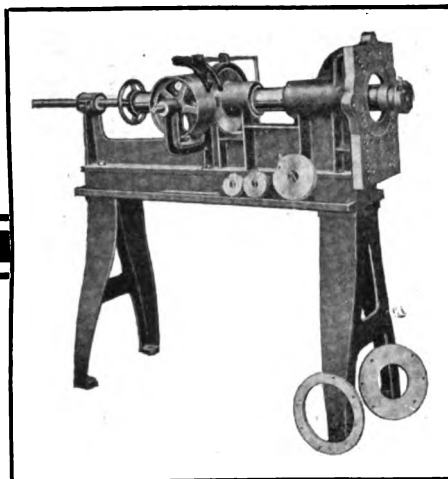
## Service Station

Every Garage Owner should have information  
about the Edison Battery on his desk.

Write us.

**EDISON STORAGE BATTERY CO.**  
Orange, N. J.

Chicago Address: 2025 Michigan Avenue



### THE MARVEL CYLINDER RE-BORING MACHINE

Fully meets the requirements of the large and small repair shop where *high-class and efficient work* is demanded.

Is a machine (not a tool) of the highest order, power or hand driven.

Produces a class of work that makes firm friends of every customer. Satisfied customers bring others.

Simpler, easy to adjust; speedy; accurate, and can be successfully operated by anyone familiar with machine tools.

Re-bores scored, glazed and welded cylinders, or those worn out of true.

Successfully re-bores any type or size of engine block from one to twelve cylinders, and from 2½" to 8" in diameter. Re-bores any ordinary four-cylinder block in less than two hours. Re-bores accurately down to the fractional part of a thousandth of an inch. Re-bores cylinders to a perfect, true circle. Quickly pays for itself. Brings dollars' worth of business never touched before.

Price is within the reach of every garage and repair shop.

Price, Terms, and Full Particulars Upon Request

**MARVEL MACHINERY COMPANY**

Dept. No. 8, 608-612 Boston Bldg.

Minneapolis, Minn.

## Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

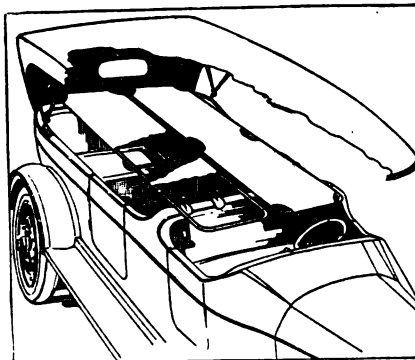
Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.  
Main Office, Leavitt St. and Jackson Blvd.

**Pondelick Brothers,** CHICAGO ILLINOIS

## SLEEP COMFORTABLY AND CHEAP



Cut showing 2 Kots placed side by side.  
Each one is 6 ft. long by 2 ft. wide.

The "ANY-KAR" AUTO KOT will fit any 5 or 7 passenger car, adjusted in 1 minute to fit a Packard or Ford. Made of galvanized iron tubing, hinged in the middle and covered with 12 oz. ducking. When not in use can be folded and carried in the tonneau, out of the way. When in position the Kot lies perfectly level and is as comfortable as a bed. Weight 15 lbs.

### YOUR CUSTOMERS WILL WANT THIS

Every automobile owner who does any touring; every salesman who makes his territory in a car; campers, hunters, fishermen—any one who remains away from home over night with his automobile, can cut his traveling cost one-third and sleep comfortably in an "ANY-KAR."

Write today for full description and our proposition to dealers. One wanted in each town.

**PEORIA AUTO-KOT COMPANY**  
PEORIA Dept. 5 ILLINOIS

# Tires Sold on Happy-Family Plan

## Delion's Success in Marketing Tires in a New and Interesting Way

The recent opening of the Delion Tire and Rubber Company's western distributing branch at 3449 Michigan avenue, Chicago, Ill., suggests an interesting growth in the Delion business and popularity that is well worth describing.

This new branch is purely a wholesale distributing station and follows out the policy of the company not to maintain any retail branch offices and has simply been opened so as to give better service to the present and prospective middle west distributors of Delion tires. This little exam-

electrotypes, etc. The company itself circularizes intensively, on the dealer's own letterhead, a generous list of customer "prospects" in the dealer's territory—thus directing hundreds of profitable inquiries into the dealer's office.

A Delion expert goes into the dealer's territory and works shoulder to shoulder with him to help develop Delion business in the biggest and best way. This expert considers himself personally responsible for a satisfactory development of the dealer's progress and problems. In fact, where it

Each territory is made genuinely exclusive to a Delion dealer—the territory being exactly defined in a binding sales contract. Thus he controls Delion trade, price and profits in his territory, and can quickly build up a permanent business with every possibility of big growth and without the fear of at any time having his profits cut into by other Delion competition.

The making of the Delion Tire—in the Delion factory at Trenton, New Jersey—is under the personal supervision of the John E. Thropp Sons' experts, known throughout the tire-making industry as authorities. This tire has been a pet project and is really a hobby with these experts. Every detail in the selection of materials, designing, combining and vulcanizing has been the result of their ripe experience and their ambition to make a tire as it should be. Specially made machinery is employed, hand and machine work are combined to the best advantage, new methods and designs and devices have been originated and perfected.

The tire is made in all sizes, both plain and non-skid. The Delion experts are keen partisans of the indented type of anti-skid tread, contending that the suction grip is surer on the road and that it provides permanent safety, not losing a whit of its effectiveness during the entire life of the tire. It also gives smoother, more comfortable riding than the projection type of tread, they insist.

### Dixon's Non-Leak Grease.

A new member has recently been added to the well known line of special graphited lubricants for automobiles that are prepared by the Joseph Dixon Crucible Co., Jersey City, N. J. Dixon's Non-Leak Grease, No.



680, has found favor with owners of cars having leaky differentials. "Where ordinary lubricants cannot be prevented from working out on the brake bands, No. 680 always effects a cure for the trouble and for this reason it is one of the best selling lubricants manufactured by the above concern." For the benefit of Ford owners and others having small cars, No. 680 is now put up in two and one-half pound tins.

Reports are becoming more frequent of car owners made seriously ill or killed by gasoline fumes from cars in private garages. The small space and the air tight doors and windows of private garages account for the fatalities. The poisonous vapors have a chance to escape in the larger spaces of public garages.



ple of the Delion zeal in making things easy for the dealer is an index to the "happy-family" policy which obtains throughout the Delion scheme of tire distribution. "We have not been left dependent on our own resources to market the Delion Tire," states the Cleveland distributor. "The company has made every effort to co-operate with us—it surely has stood back of us in every possible way."

Not one but every Delion dealer is given an assistance from the company that is really unique. To begin with, the Delion policy is to have no greater number of distributors than it can take care of to the best possible advantage. Each distributor is given the benefit of all the usual "dealer helps"—circulars, booklets, folders, sections of the tire, signs, newspaper advertising

is desired by any distributor, the Delion Company provides a capable tire man to go into the dealer's own employ.

On the other hand, every Delion distributor is made to feel his responsibility for the Delion business in his territory. He understands that Delion interests and his own are identical. In selling Delion tires he is given full authority to act as the Delion factory's personal representative—and to make all arrangements, service, adjustments on claims, etc., according to his own best judgment and without advice from the factory. The factory stands by his decision in every matter. Vested with such authority—and with the experience of the Delion experts and the Delion factory at his command—he is best equipped to give an unusual service to his customers.



**Garage Signs**

To the garage a Flexlume sign is a necessity—a business-pulling investment. Its raised white letters standing out from a dark background make not only a bright, distinctive night display, but an attention-pulling day sign. A few dollars will bring a Flexlume garage sign to you, cash or easy payments.

*Write for sketch and full information.*

**FLEXLUME SIGN CO.**  
1450 Niagara St., BUFFALO, N. Y.  
St. Catharines, Ontario  
Electrical Products Corporation, - Los Angeles, Cal.



**BEWARE OF IMITATIONS**

The right-angle interlock is your safeguard

**PISTON RINGS**

This perfect three-piece construction justifies the name—**EVER-TIGHT**. Note now accurately the right angles fit together. Engineers and Engine Builders acknowledge that this is the only proper construction for safety and prevention of leakage.

**Get Your Share of EVER-TIGHT Profits**

Make money for yourself and save money for your customers by installing Ever-Tight Piston Rings in their cars. That puts you "in solid" with your trade and gives your bank account a boost at the same time.

Ever-Tight Piston Rings absolutely prevent leakage. They are guaranteed to give compression in out-of-round cylinders as well as in true ones. They produce more power—thus reducing maintenance cost.

Ever-Tight Piston Rings consist of three separate parts grooved together into one ring by its own right angle interlock. They fit tight, without binding. They are flexible, and friction is reduced to the minimum. The Ever-Tight is the only perfect three-piece piston ring on the market. It is the leader.

It's up to you to investigate Ever-Tight Piston Rings for your own sake as well as your customers'. If dealers do not carry Ever-Tight Piston Rings, write us direct.

**Ever-Tight Piston Ring Co.**  
1431 Chestnut St. St. Louis, Mo.

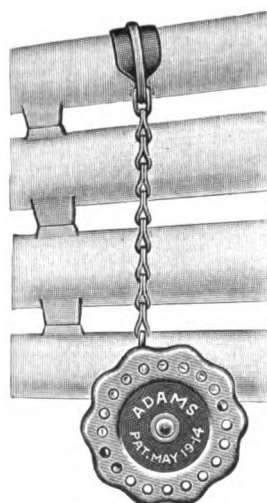
## *Jobs Await Skilled Mechanics in Detroit Factories*

- Q** Come to Detroit—Five Dollar a Day Jobs waiting for skilled mechanics.
- Q** We teach you the business in 100 hours—a new and practical system.
- Q** Endorsed by all of the leading automobile factories.

*Terms to deserving applicants      Get particulars*

**Machinist Training School**  
140 East Fort St. :: DETROIT, MICH.

## **Adams Auto Top Holder** "STOPS THE RATTLE—SAVES YOUR TOP" NEATEST—QUICKEST—STRONGEST



Dealers everywhere will find a ready sale for this best of all Top Holders. **An ornament to any car.** No unsightly projecting arms, nor dangling straps. Can be installed in two minutes, and operates quicker than any other.

Two sizes —  $\frac{5}{8}$ " holes for small cars.  $\frac{3}{4}$ " for large ones.

**Price \$2.00 per pair**

*Write for Discounts to Dealers*

**ROCK ISLAND MFG. CO.**  
Department C      ROCK ISLAND, ILL.

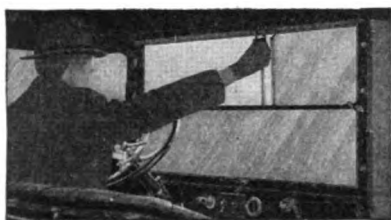


### Clear-O-Scope.

A perfectly transparent and spotless windshield in any weather and at any temperature is possible by means of the Clear-O-Scope, manufactured by Clear-O-Scope Company, 738-40 West Madison street, Chicago.



Entirely aside from comfort and convenience and the confidence coming from a clear view of the roadway, Clear-O-Scope users claim it pays its way almost daily by the avoidance of accidents. The flurry of rain, snow or mist which instantly cuts off the view of the driver can as instantly be removed by the Clear-O-Scope; and the possible accident is easily prevented.



Dealers are rapidly stocking the Clear-O-Scope, as it is an essential on any car and, even at its retail price of \$1, gives a good margin of profit.

### Americans First.

The first anniversary of the Packard Motor Car Company's policy of Americans First was marked January 31 by the issuance of a statement by President Alvan Macauley to all the factory and office employes of the Packard, reaffirming in positive terms the provisions of the policy.

"This company intends forever to build up its organization from among its loyal employes who are citizens of the United States, or have in writing expressed their intention to become such," President Macauley declared. "Employes who are citizens of foreign countries will be welcome in the company's ranks, but they need not expect promotion to positions of responsibility and trust. Employes who are not citizens can readily file their first papers applying for citizenship, and the company will pay the fee in connection therewith. In that way they can qualify for promotion. No other course is open.

"It is our intention to complete our records to show the names of all employes who are citizens or who have taken out their first papers. Promotions to higher positions will be made only from that list, though names will be added to it from time to time, as foreign-born citizens file their papers. Employes who have shown their loyalty, not only to this company but to the United States, are entitled to the preference and we shall see that they have it."

### Maxwell Is a Mud Horse.

An official of the Maxwell Motor Company, Inc., Detroit, Mich., writes that the superiority of a light, powerful car was demonstrated with dramatic emphasis recently in the transcontinental run over the Yellowstone Trail, from Plymouth, Mass., to Seattle, Wash.

The purpose of the tour was to carry a message for the War Department. The message was carried in relays, and sixty-four cars, running day and night, participated in its delivery. A Maxwell touring car carried the message from Webster to Aberdeen, South Dakota, a stretch of fifty-five miles, taking the place of a heavier car that had been provided. The Maxwell was pressed into service in this emergency because of its ability to ride the mud. It was found that the heavier car could not keep the grades because of the slippery roads. The Maxwell made the run without mishap, going the last twenty-three miles in thirty-six minutes. There have been many recent evidences of the car's abilities in long-distance travel. Particularly impressive are the statements of many women drivers of Maxwell cars, who find that they can drive long distances under adverse conditions and come through without mishap.

### Three Automobile Advertisers.

Edward M. Nolen, F. W. Thurnau and Harlow Hyde, widely known in the motor car and accessory industry as specialists in automobile advertising, have become connected with Vanderhoof, Condit & Comrie, general advertising agents of Chicago. Mr. Nolen has been made vice-president and director of advertising. Among the products he has handled in preparing plans and advertising copy are the Stutz, Pathfinder, Briscoe, Allen, Moline-Knight, Diamond Tires, Velvet Shock Absorbers, Perry Auto Lock, Smith-Form-A-Truck and others.

For many years Mr. Thurnau was advertising manager of Vogue and Hampton Magazine and for three years recently he was associated with the Dunlap-Ward Company, where he handled several automobile and accessories accounts.

Harlow Hyde, who will be the Indianapolis service representative for the company, has been associated with the motor car industry since 1909 as advertising manager of the Bosch Magneto Company, the Stevens-Duryea Company, the Elmore and others. For two years he has conducted an advertising and publicity bureau in Indianapolis.

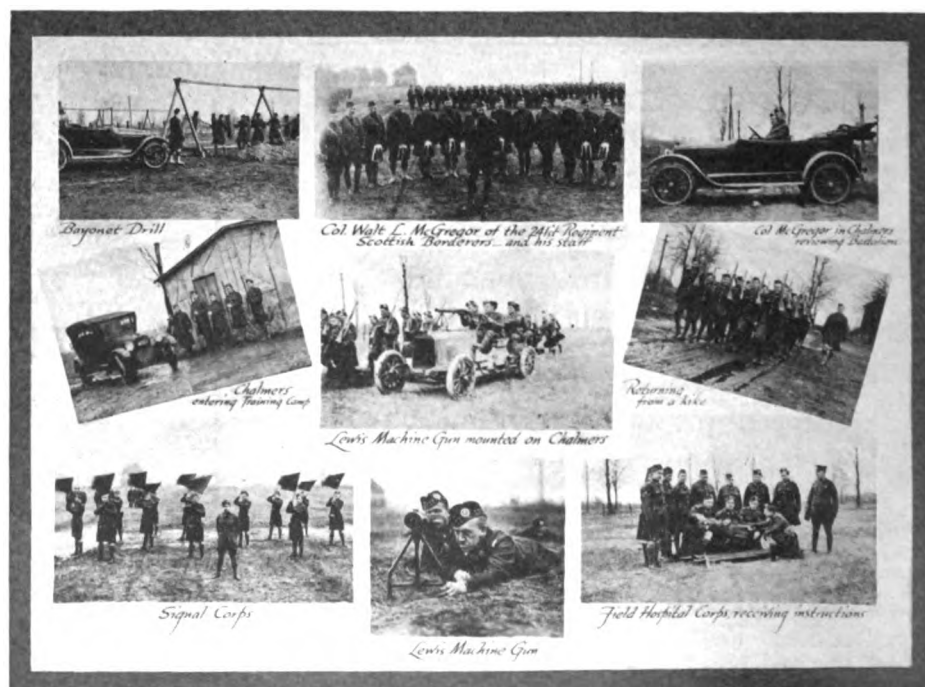
### Automobiles in War Time.

"Peace Talk" has had little if any effect upon the activities of the Canadian Volunteers. Many of these regiments, scattered through Canada, are now nearing their fighting strength.

Starting early in the morning and lasting until late in the afternoon, the Canadian Volunteers are instructed in military tactics. Automobiles are playing a leading

part in all field activities in the Canadian military training camps.

The accompanying illustrations tell the story of how the Chalmers is meeting the requirements of the military forces in the Dominion. The Chalmers are driven over the hardest roads in the land. Many times they travel for miles across country encountering every obstacle known to a motorist, Chalmers have well withstood the test of endurance in every instance.





**Mr. Dealer**

## Here Is Your Biggest Opportunity to Cash In On Winter Business:

Instead of letting your customers store their Ford Roadsters or Touring Cars for the winter—which means loss of revenue to YOU—show them how they can get "full value" from their Fords, besides transforming them into cars of beauty, by equipping with MILLSPAUGH & IRISH Ford Coupes or Ford Sedans.

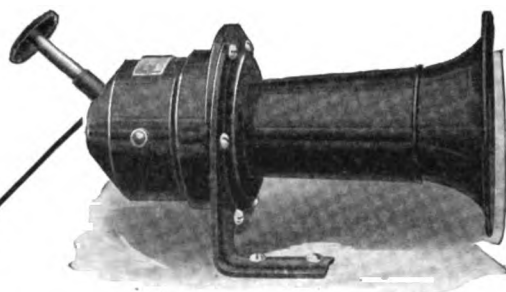
Our Ford bodies are all of standardized dimensions and can be fitted to any Ford chassis in an hour's time.

PROFITABLE DEALERS' OPPORTUNITIES

Write for Particulars.

## Millspaugh & Irish

212 W. McCarty St., Indianapolis, Ind.



## The Garford Hand Horn — \$3.50

Couldn't be better if  
we charged \$100.00

It is at once the simplest and most dependable of all Warning Signals.

Note the rakish slant of the plunger, set at an angle of 45 degrees. This makes it convenient to operate.

A touch of the finger on this plunger gives you all the warning that you want instantly. The note may be modulated at will from a loud, far-flung call to a short, snappy signal to clear the road.

Remember there are no batteries, nothing complicated in construction and nothing to get out of order.

*We have a splendid proposition for dealers.*

*Write for terms.*

**The Garford Manufacturing Co.**  
ELYRIA, OHIO

## Save Money—Save Clothes

Save  
Time



Save  
Temper

## Make Punctures Impossible With

# TIREOID

*"It Seals Punctures"*

**NO** matter how bad the weather—how you are dressed—how urgent your business—if you have a puncture you've got to fix it at once. You can forget punctures if you have Tireoid in your tires.

*Tireoid seals up any puncture without loss of air. Here is guarantee: If, within six months after your tires have been treated with Tireoid, you have a puncture not exceeding in size that made by a 30-penny nail, you will receive your money back in full.*

**We Have Agents Everywhere**

Let one of them demonstrate Tireoid and explain the terms of our guarantee. Price \$10 for set of 3 or 3½ inch tires; \$13 for 4 or 4½ inch tires; \$16 for 5 or 5½ inch tires.

**The Tireoid Co., 1200 Michigan Ave., Chicago**

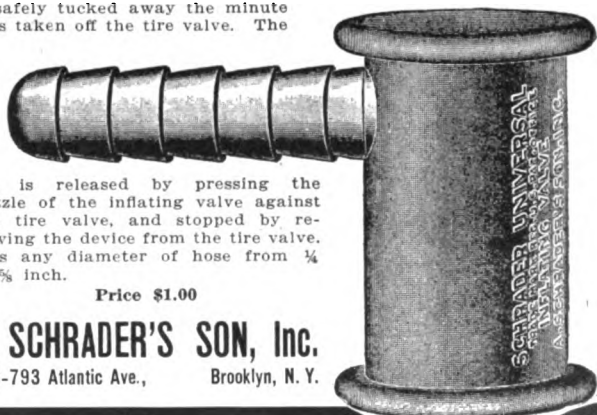
## No wasted "Free Air"

## SNAP! when the inflating valve is removed the AIR PRESSURE STOPS

All garages and repair shops distributing free air can profitably use the

## SCHRADER UNIVERSAL INFLATING VALVE

If you have a SCHRADER valve you know that your "bottled air" is safely tucked away the minute it is taken off the tire valve. The



air is released by pressing the nozzle of the inflating valve against the tire valve, and stopped by removing the device from the tire valve. Fits any diameter of hose from ¼ to ½ inch.

Price \$1.00

**A. SCHRADER'S SON, Inc.**  
783-793 Atlantic Ave., Brooklyn, N. Y.

### Seal-Tite Piston Ring.

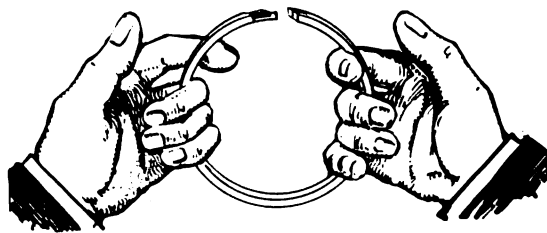
Seal-Tite Piston Ring Co., Minneapolis, Minn., bases its first claim to superiority on its piston ring being cast in one piece; this casting being done individually, using a fine-grained, gray iron of the greatest flexibility attainable.



The sealing device is one of the features. The shoulder fits into the groove on the opposite side, sealing it perfectly. Back of the shoulder is a thin metal spring, the exact depth of ring, forming a continuous metal packing with a free, elastic expansion which adjusts itself automatically to wear, thus preventing the flow of surplus oil from entering the combustion chambers and forming carbon—the hardest substance known.



Seal-Tite rings always maintain full compression on cylinders because the opening in this ring is correctly sealed, thereby preventing the escape of gases, and consequently producing more power for fuel consumed than the ordinary piston rings. The seal on a "Seal-Tite" ring can open as much as an eighth of an inch, yet remain perfectly tight against oil or gas leaking through. The tongue and groove construction does it. Another good thing about "Seal-Tite" rings is that they are micrometer accurate to the thousandth part of an inch.



Aside from quality, the Seal-Tite company meets competition on price. Garage men and dealers are asked to write direct to the company for prices and further particulars.

### Timken Has Two Advertising Experts.

The advertising work of the Timken Companies has grown to such proportions that it has been decided to handle it through two separate advertising departments. Frank N. Sim will retain the advertising

management of the Timken-Detroit Axle Company, with headquarters at Detroit. W. H. Taylor has been appointed advertising manager of the Timken Roller Bearing Company with headquarters at Canton, O.

Mr. Taylor was formerly with the Campbell-Ewald Advertising Agency of Detroit and comes to the Timken organization with a broad experience covering thirteen years in various branches of advertising work. His efforts have been displayed in many big national campaigns such as Old Dutch Cleanser, Sanatogen, Vaseline, etc.

### Superior Spot and Trouble Lamp.

The Superior spot and trouble lamp is made complete in the factory of Pittsburgh Lamp, Brass & Glass Co., Pittsburgh, Pa.

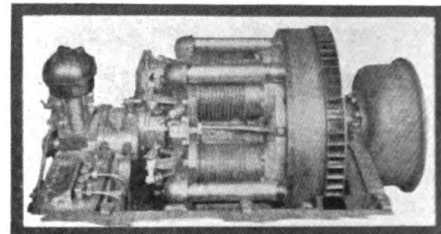
The lamp has a spun brass reflector, silver plated, and the exterior is finished in dark enamel, which will not peel. It is also equipped with an adjustable mirror, which can be removed. This mirror enables you to see the danger behind. It is equipped with a 6-volt 21-candle power nitrogen lamp with double contact, with switch on end of handle.

The "Superior" can be moved in any direction desired and throws a direct beam of light twice as far as the head lights. It is indispensable on narrow roads and prevents collisions. It enables one to see turns in the road before coming to them; to read house numbers and road signs at night. Each

spot light is equipped with ten feet of cord, which enables one to detach this lamp from its socket in case of engine trouble or tire trouble at night, giving an excellent light to work with.

### Macomber Rotary Motor and Eagle Car.

The Eagle-Macomber Motor Car Co., Sandusky, Ohio, is using the Macomber rotary air-cooled motor exclusively in its Eagle light cars. The cut shows a side view of the 18-20 h. p. four-cylinder motor used in the Eagle.



Following are five reasons, given by the factory, why the Macomber rotary is more efficient than any multiple cylinder engine:

1.—In a 6-cylinder reciprocating engine it is necessary to overcharge the cylinders nearest the carburetor in order that the cylinder furthest from the carburetor is not impoverished.

2.—All engineers know that a crank shaft is a very imperfect device for transmitting power. The Macomber rotary engine has no crank shaft.

3.—This gives the action of the turbine which is the principle sought for since engines were first invented.

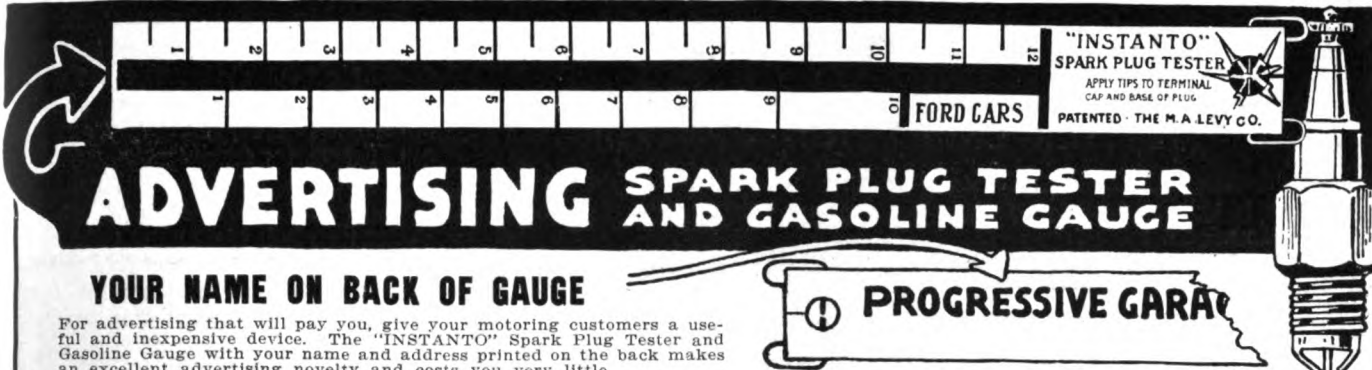
4.—Fortunes have been spent by builders of reciprocating engines endeavoring to use ball bearings on their crank shafts. Failure has been their only reward.

5.—Fly wheels are not very expensive on first cost, but every mile you carry them must be paid for in extra fuel and wear and tear on tires for excess weight. This applies as well to the radiator, which is expensive on first cost and every one knows the trouble from leaking, freezing, clogging and many other difficulties. The Macomber has no fly wheel or radiator. Result—many troubles and much expense eliminated.

### Seiss Company's New Building.

The Seiss Manufacturing Co., Toledo, Ohio, makers of the Seiss automobile, motorcycle and bicycle horns, has bought the large factory building facing on Lake Shore Avenue, running from Tudor Street to Alva Street; covering a floor space of over 52,000 square feet.

The new building offers the Seiss Company opportunity for a long desired expansion and which is about triple the size of their present building. The building is being entirely remodeled with steel sash, fire sprinkler system and equipped throughout with the newest machinery for the company's manufacturing needs. It is the intention of the Seiss company to transfer its manufacturing plant to the new building about February 1.



**"INSTANTO" SPARK PLUG TESTER**  
APPLY TIPS TO TERMINAL  
CAP AND BASE OF PLUG  
PATENTED - THE M. A. LEVY CO.

**ADVERTISING SPARK PLUG TESTER AND GASOLINE GAUGE**

**YOUR NAME ON BACK OF GAUGE**

For advertising that will pay you, give your motoring customers a useful and inexpensive device. The "INSTANTO" Spark Plug Tester and Gasoline Gauge with your name and address printed on the back makes an excellent advertising novelty and costs you very little.

**THE M. A. LEVY COMPANY**  
429 So. Dearborn St. Chicago, Ill.

**PROGRESSIVE GARAGE**

Keeping your name before your customers in a most effective and the least expensive way is your problem. The "INSTANTO" is the answer. Sample 10 cents to cover postage.

**WRITE TODAY FOR PRICES**



**GARAGE AIR TANKS**

Scaife Copper-Brazed Tanks will hold air indefinitely without loss of pressure.

Copper-Brazed Tanks are made only by our company.

*Beware of Imitations!*

**Wm. B. Scaife & Sons Co.**  
26 Cortlandt St. NEW YORK, N. Y. First National Bank Bldg. PITTSBURGH, PA.

**GASOLINE STORAGE OUTFITS**

If you wish catalogue and prices of the cheapest, safe and thoroughly reliable gasoline storage system on the market, write us.

**Wm. B. Scaife & Sons Co.**  
New York Office: 26 Cortlandt St. First National Bank Bldg. Pittsburgh, Pa.

**Standardize Your Repair Charges**

**The Cosmo Time Stamp**  
*Thousands in Use*



Is proving its value in Garages all over the country. GIVES you exact DAY, HOUR and MINUTE each and every repair job is started and finished.

Base your charges on exact time consumed and you can't help but make money in your repair department.

STOPS arguments with your customers.

MAIL the COUPON, or write for one on 10 days' trial. No obligation to purchase. Guaranteed—Accurate—Durable.

**Price \$7.00**

**Our Free Trial Offer to Garages and Repair Shops**

**A. D. JOSLIN MFG. CO.,**  
225 W. Erie St., Chicago, Ill.

Please send me COSMO TIME STAMP on 10 days' trial. At the end of 10 days I will either return the Time Stamp or remit you the price, \$7.00.

Name .....

Address .....

**THE NAME SPACKE ON AIR COMPRESSORS INSURES SERVICE-QUALITY-ECONOMY**

In the construction of Spacke Air Compressors the first thought is—quality—rigidity—endurance. It is possible to build cheaper air compressors than the Spacke, but if it were possible to build a BETTER air compressor—it, too, would be a SPACKE.

Install a SPACKE and end your air compressor troubles.

**THE F. W. SPACKE MACHINE COMPANY**

WRITE US TODAY FOR PARTICULARS

Indianapolis, Ind.






# New Entry in Racing Game

## Pan-American Is Building Special Car Which Tom Alley Will Drive in the Big Events

PAN-AMERICAN Motors Corporation, Chicago, is building a special racing car, to be campaigned this year and next in the big speedway races, with Tom Alley as driver. The motor is a four cylinder and has sixteen valves, capable of developing 135 H. P., the frame is of special chrome nickel steel, all gears in the differential transmission and steering gear of special nickel steel and especial attention being given to the body design, giving the car the least wind resistance possible.

Mr. Alley began his racing experience in 1909, assisting Harry Stutz with the Marion Motor Car Co. In 1910 he was with Harry Knight, who drove a Westcott. In 1912, Alley was mechanic with De Palma when he won the Vanderbilt cup, Alley receiving a gold medal from De Palma. In 1913, Alley was in the pits for De Palma and in

1914 was mechanic for De Palma when the latter won a second leg on the Vanderbilt cup.

In 1914, Mr. Alley began driving with the Dusenbergs team, he being in the lead at 176 miles on the Sioux City dirt track when he was forced out. Later in the season he tied and twice ran second to Mulford and won several other races against top-notch drivers. In Minneapolis he established a world's record when he finished first in the 100-mile race. His time was 91:30 over a one-mile dirt track, winning from Burman, De Palma, Mulford and others. He raced with uniform high ranking in 1915 and 1916. Both he and the Pan-American management believe this is his year and will try to demonstrate it with the Pan-American at all the big races.



### Maxwell Wins Economy Tests.

H. P. Jayne, government sealer of weights and measures, officially observed a test in the Yosemite Valley, Cal., recently. Five cars were started from the Commercial club in Fresno for the valley, after Mr. Jayne had sealed the tanks. The roads were in the worst possible condition. The steep grades were made doubly hard by having six inches of dust and the ruts from the heavy traffic let the cars down frequently to a point where the axles scraped the road.

Arriving in Yosemite Valley, Mr. Jayne broke the seals, and with certified measures refilled the tanks with gasoline, also weighing the loads carried by the cars, including passengers and luggage. The result showed that

the Maxwell consumed seven gallons of gasoline and carried 875 pounds. Its nearest competitor used eight and six-tenths gallons and carried only 635 pounds. The third car in the competition used nine gallons and carried 874 pounds. Two other cars trailed along. In other words, the Maxwell carried a greater weight than any other automobile in the contest and did two miles to the gallon better than its nearest competitor.

At the Virginia State Fair held in Richmond early in October, the Maxwell won a big economy run in competition with practically all the four-cylinder cars sold in that city. All of the contestants were started with one-half gallon of gasoline in a special tank provided by the fair authorities.

### Hupp Motor for Demonstration.

The Hupp Motor Company has put a specially cut-out show motor and a rear axle, opened to show operation of gears, in the lecture room at the Michigan State Auto School, for demonstration work.

These are mounted on steel stands and equipped with levers for hand operation, so that the youth who aspires to be an automobile man will be thoroughly versed in the theoretical side of the work before going in for the practical shop instruction which follows.

### Union Highest Compression Piston Ring.

Modern Motor Parts Company, Rockford, Ill., is prepared to turn out 2,000,000 Union Highest Compression Piston rings this year; the advance demand indicating a sale in excess of that number.

The big idea of the Union Highest Compression Piston ring is the ingenious union which engineers pronounced the most perfect invention yet devised to overcome compression and gas leakage. The union, which couples the joint, is so constructed that it leaves absolutely not a single direct line for leakage of gases or oil. The result of this is 100 per cent efficient compression under all conditions. No excessive oil can pass beyond the ring. There is not a gap or crevice in the entire union to accumulate carbon or gummed oil.

Another feature which the engineer and motorist will readily appreciate is the large bearing surface of the Union Highest Compression Piston ring. This union bears on the outside of the ring. This means an extremely long life to the union itself and an even pressure against the cylinders. The greater the pressure against the union the tighter it fits.

By leaving the scale of the casting on the inside of the ring, the original structure of the metal itself is maintained, providing unusual resiliency. The result of this is non-collapsibility even under stresses which would collapse most rings. The greater advantage of this is shown in the small bore and long stroke motor, which, because of its continuous high speed, demands absolute non-collapsibility. Still another advantage of the Union Piston Ring of unusual importance is the fact that it is ground rather than turned, making perfect fit all around the cylinder walls.

The Modern Motor Parts Co. is issuing with each set of Union Rings what appears to be the most unusual and strongest guarantee yet given by any piston ring company. They are starting out to make a record for Union Highest Compression Piston Rings and are guaranteeing practically 100 per cent prevention of compression leakage and elimination of carbon accumulation. They claim to be able to back up this guarantee with actual results because of the peculiar construction of the Union. The elimination of crevices and gaps very readily show the feasibility of this.

**MR. AUTO  
OWNER**  
SAVE TIME,  
TROUBLE and  
WORRY

By testing  
your Spark  
Plugs with the



## PERKINS SPARK PLUG TESTER

Locating any trouble instantly without removing the Spark Plugs. GET THE BEST RESULTS FROM YOUR SPARK PLUGS—SEE THAT THE GAPS ARE UNIFORM—LIKE THE GAP IN THE TESTER.

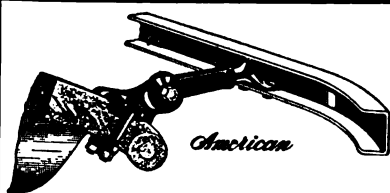
Try the Tester—if the plug is O. K. a good fat spark will result, but broken porcelain or fouled plug will not show spark.

Write today for sample for 75 cents. Send post-office or express order. A good seller and profitable proposition for dealers.

1777 Broadway

A. D. PERKINS

New York City



## American Bumpers

Best Bumper on the Market

Ask your jobber for "AMERICAN"  
Bumpers. They are quick sellers.

**AMERICAN BRASS FOUNDRY CO.**  
Milwaukee, Wis.

## KEEP YOUR BOLTS WHERE YOU CAN FIND THEM



KEEP YOUR REPAIR PARTS,  
SUCH AS BOLTS, SCREWS,  
COTTER PINS, BALL  
BEARINGS, ETC., WHERE  
YOU CAN FIND THEM IN-  
STANTLY, AND WHERE THEY  
WILL BE PROTECTED FROM  
DUST, RUST, ETC., IN A RE-  
VOLVING CASE MADE IN  
MANY SIZES, OF HIGH  
GRADE MATERIAL.

Write for a Catalog

**AMERICAN BOLT AND  
SCREW CASE COMPANY**  
DAYTON, OHIO.

## OIL CAN TIPPER



This Oil Can Tipper will  
pay for itself in a very  
short time in the saving  
of oil due to slopping  
when pouring from a 5  
gallon can to measure.  
Always clean. Very con-  
venient.

**PRICE**  
No. 4080 HC, each - \$1.75

**GRAY-HEATH CO., 1440 Michigan Ave., CHICAGO**

The image shows a car with a radiator cap being removed. The text "BLACK DIAMOND" is written above the car. Below the car, the text "RADIATOR CURE" is written in large, bold letters, followed by "STOPS LEAKS".

Acts instantly and permanently. Highly endorsed by garagemen, repairmen and users. Try it at our expense.

Write for agency particulars and sample package.

**THE M. W. DUNTON COMPANY, Providence, R. I., U. S. A.**

## "Hercules" Guarantee Welding and Brazing

Of all metals—aluminum a specialty. Su-  
perior machinists. Fine Piston castings.

### CYLINDERS REBORED

New Pistons and Rings furnished. We sell  
Piston Castings. We manufacture Acetylene  
Welding and Cutting Apparatus and Carbon-  
Removing Apparatus. Send on your work—our  
prices are right—or write.

**"Hercules" Welding & Machine Co.**

223-225A N. 16th Street

Philadelphia, Pa.

Members A. A. G. O.

## "CURKO" SOCKET WRENCHES

Are turned from the best Solid Bar  
Steel and are Heat Treated. For

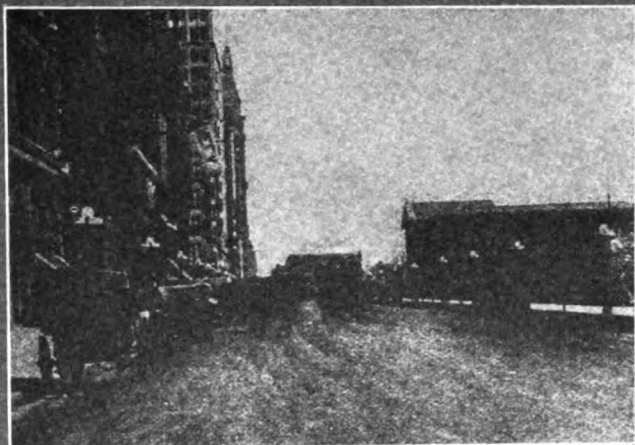
### STRENGTH and RELIABILITY

They are unexcelled. Ask for dealer's discount.

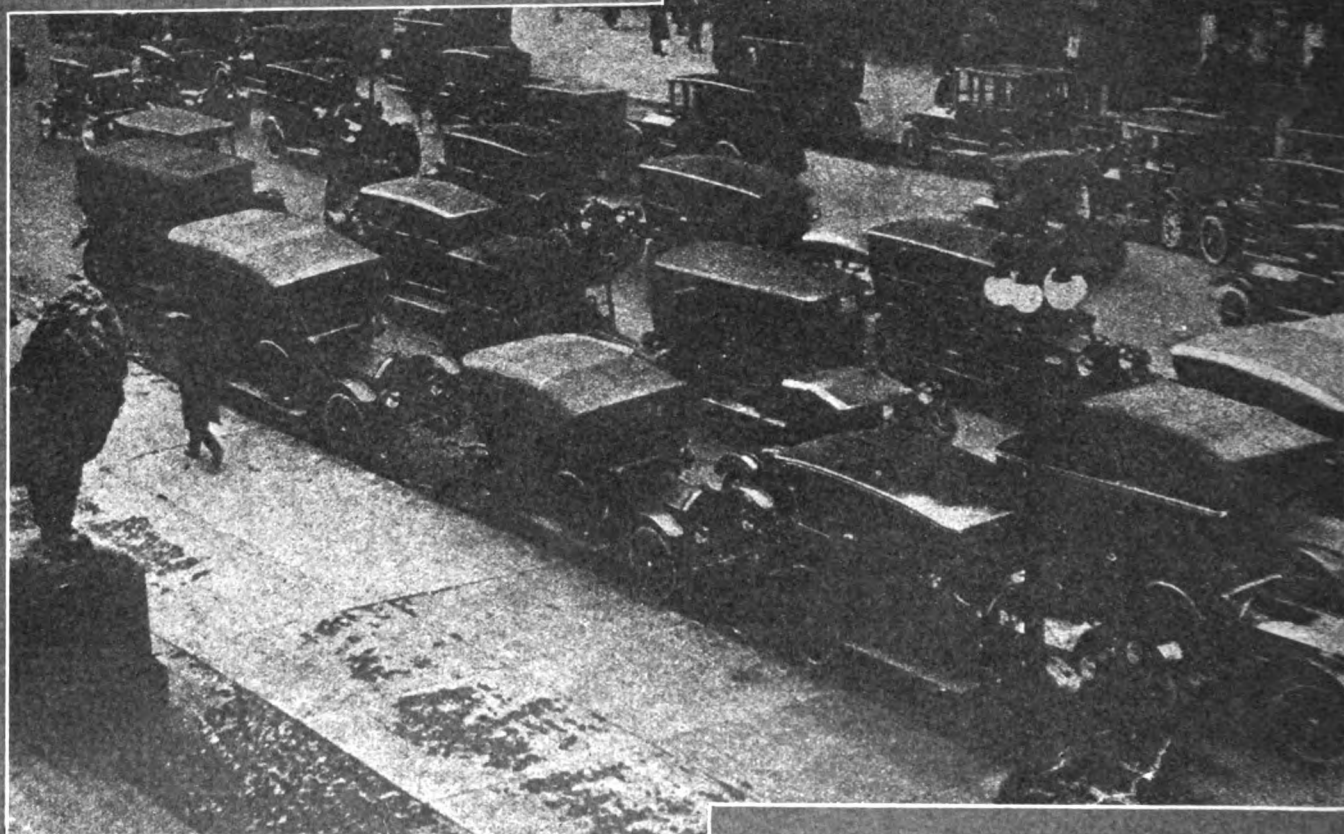
Price  
\$1.00



**Currier-Koeth Mfg. Co., Co udersport, Pa.**



## Automobile and Garage Business Now a Year Around Affair-No Off Season!



Two top views show, by contrast, extent of winter business development of recent years. Scene (large) is on Michigan Ave., Chicago, near Art Institute, taken Feb., 1917, and small upper view is of same thoroughfare a few years ago. Lower left hand view of Woodward Ave., Detroit, taken in Jan., 1917, indicates heavy automobile traffic there. Lower right hand view is of Fifth Ave., New York City, near 42nd St., taken in December. The query arises, Could the summer traffic of autos at this point be heavier?

# MONOGRAM

## OILS and GREASES

### QUALITY SERVICE

Used exclusively and recommended by more manufacturers of automobiles than any other oil on the market.

**THE MAKERS of MONOGRAM**  
*New York Lubricating Oil Company, New York*  
 BRANCHES IN PRINCIPAL CITIES

# The PERFECTION

## CYLINDER GRINDER

will regrind all sizes of motorcycle and automobile cylinders. This grinder will fit on any ordinary engine lathe.

*Details on Request*

**WOOD & SAFFORD MACHINE WORKS**  
 Great Falls, Mont.

# WASTE PAPER

—bale it and get good prices—reduce fire dangers.

**Baling Presses**  
 From \$12.50 Up

**Safety-First** is all steel—fire-proof—simple to work—makes money—turns waste into paper dollars. All sizes for all purposes.

Write now for free catalog and our 10 Day Free Trial Offer.

**CHICAGO BALING PRESS COMPANY**  
 Dept. A. 305 S. La Salle St., Chicago, Ill.



Tire Applying Press

## Hydraulic Arbor Presses

work easier than any others.

We make many sizes for many purposes.

WRITE FOR CATALOG

**Lourie Manufacturing Co.**  
 SPRINGFIELD, ILL.



## Announcing the "SEAL-TITE" PISTON RING

Unquestionably the simplest, most accurate and efficient piston ring on the market. A One-Price, High - Compression Ring. Dealers, get busy and secure the profitable agency for the Seal-Tite Ring which will assure "more" power, perfect compression and lubrication. Sample and Descriptive Literature upon request.

**SEAL-TITE PISTON RING COMPANY, Minneapolis, Minn.**



# DELION

## Long Service TIRES

Each Delion dealer gets *all* the Delion trade in a definitely-named territory. This holds good *permanently*. And he gets the profits he *should* have in tires. Investigate.

**DELION TIRE & RUBBER Co., Inc.**

Main Office: 1922 Broadway, New York  
 Chicago Office: 3449 Michigan Ave., Chicago



**STOP and LOOK**

## UNIVERSAL MIST

The Polish with the Shine in it.

A most wonderful new polish for Autos, Furniture, etc. Nothing like it. Once used always used. Positively guaranteed not to contain any acid or other harmful ingredients.

Dealers and Jobbers Write—Big Profits

**ELFRING & ELFRING**  
 BENSENVILLE, ILL.



SINGLE ROW

DOUBLE ROW



THRUST

ROLLER

**REGROUND—NEW—EXCHANGED STEEL BALLS**

Satisfaction Guaranteed

1919 Michigan Avenue - CHICAGO

—ALSO—

Philadelphia

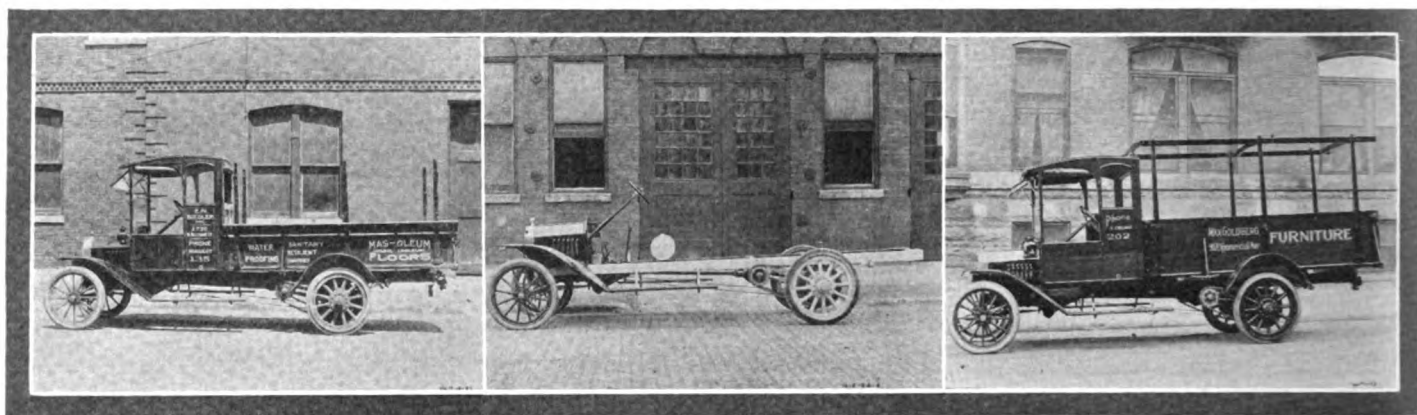
Frankford, Pa.

Boston

New York



# Dearborn One-Ton Truck Unit



Garagemen and dealers as a class have a too limited idea regarding the size of the market for truck units. There are over a million Ford cars alone in the country and the only solution of the second-hand question on these cars, when the bodies are worn out (and Ford bodies go quickly), is to convert them into sturdy one and one-half ton trucks, which can be done double-quick by the use of the Dearborn Unit.

This Unit is said to be built along real truck lines. The concern manufacturing it, the Dearborn Truck Co., is not a stock selling proposition. It is controlled by Chicago capital and managed by Chicago men who have been pioneers in the truck unit business. Both W. J. Kenrick and Mr. Porter were with another and older company, the former as sales manager and the latter as general manager.

A great many new dealers have been recently added to the Dearborn retail dis-

tributing and selling force during January, the factory is running at its fullest capacity, and the company has increased the number of trucks actually shipped once and a half times in the past thirty days, is the enthusiastic statement of a company official. A similar increase is expected in February and will be attained.

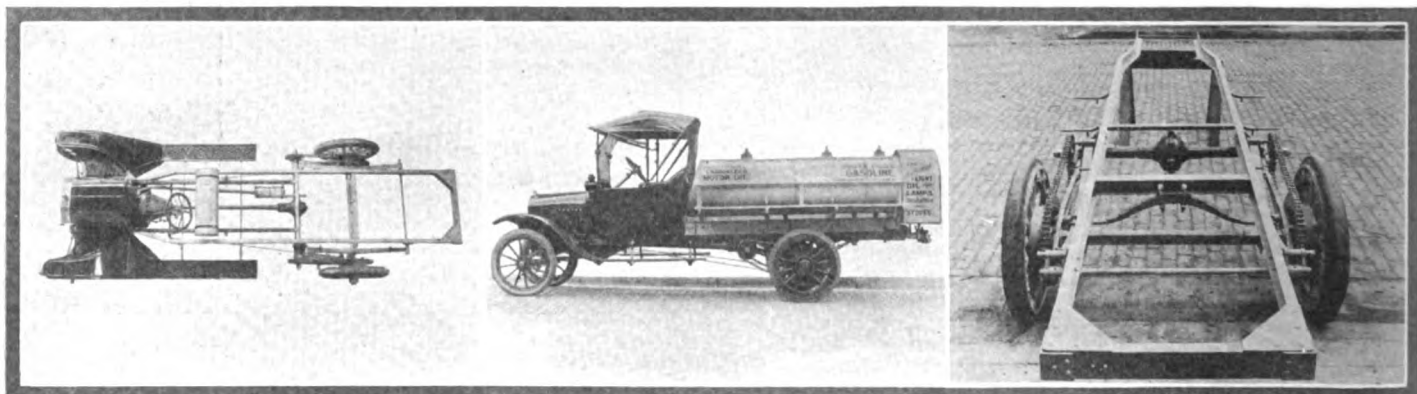
The Dearborn unit is light in weight, simple in design, yet possesses durability and strength. The frame is 14 feet long and runs clear up to the radiator on a Ford chassis. It fits snugly and does not require any cutting of Ford fenders at the dash. There are heavy brackets attached to the frame. The builders of this unit assert with confidence that the Ford Dearborn Truck will give as good service and satisfaction and look as neat and classy as any \$1,500 standard built one-ton truck.

A one-ton truck is the most useful size for general business purposes, and the garageman and dealer going into the truck business should take this important fact

into consideration. The garageman and dealer should also realize that the commercial car business deals with economic and commercial conditions, whereas the pleasure car business caters more particularly to the luxury side of life. There is hardly a garageman or dealer anywhere who could not take on a commercial car agency and add to his income, and the first step in this direction is to secure the agency of a truck unit for a Ford chassis.

The Dearborn one-ton truck unit sells at \$350 f. o. b. Chicago. It has a guaranteed carrying capacity of 2,000 pounds. The length of the units is 14 feet; width, 32 inches; loading space, 8 feet 10 inches; wheel base when attached to Ford chassis, 125 inches; tread, standard 56 inches, center to center of wheels; weight 1,000 pounds, with chassis added 1,850 pounds.

The accompanying illustrations give much of the detail of the unit and full descriptive literature can be obtained on request.



## Getting Busy on Spring Car Sales.

"Don't wait for the robins and the johnny-jump-ups, but get busy with spring car prospects before the spring rush of work of all kinds begins and everybody is too busy to talk cars," is the slogan of L. R. Peart, a Paige dealer at Logan, Utah.

While the snow was on the ground and so much of it that driving was at times impossible, Mr. Peart commenced to interview farmers and townsmen about cars,

and sales followed the interviews, while all this time other dealers were sitting around hot stoves figuring what they would do when the bobolinks began to sing. Part of the time Peart traveled to farmers on snow shoes.

He had been reading the auto trade magazines and knew what cars are and was a Paige man through and through. He sold eleven cars in three weeks, contracts signed, cash deposits put up, etc. "The early bird gets the worm."

## Swendson Heads Milwaukee Garagemen.

E. H. Swendson, 722-724 National avenue, Milwaukee Ford dealer and hustling garageman, was elected president of the Wisconsin Garage Owners' Association at the annual meeting held early in the current month. William Gruhy was elected vice-president; H. Penner, treasurer, and Nathan M. Stein, secretary.

Meetings of the association hereafter will be held at the Auditorium, committee

## M-P PISTON RINGS

**For Every Car**

YOU need only one kind of piston-ring in stock—the M-P. One-piece; concentric; leak-proof. Made of close-grained grey iron, accurate to one one-thousandth of an inch. Simple lock-joint never leaks compression.

**STOCK M-P PISTON - RINGS**

and watch your customers register satisfaction. Write today for dealer's terms.

THE METAL PRODUCTS CO., St. Louis, Mo.



## S-M-C

**Safety Made Certain**

If you would rather be safe than sorry—if you want your brakes to act promptly and efficiently—see **S-M-C** on the roll of

### BRAKE LINING

Made right—it holds right; meets every test.

**\$1.50 Ford Set**

is complete with three proper lengths for Ford Transmission and all rivets required. For sale by wideawake dealers. If your dealer hasn't it, send his name and \$1.50—we'll send it direct, postpaid.

**STAYBESTOS MFG. CO.**  
The "Modern" Factory  
5518 Lena St., Germantown, Philadelphia

**\$1.50**  
equips Ford car



## WALL'S CYLINDERREBORING and PISTON SERVICE

Twenty years' experience of high class automobile work of our President, Mr. Wall, enables us to render an expert service in auto machine work of all classes. Every job has Mr. Wall's personal supervision—every mechanic an expert.

Prompt Service  
Reasonable Charges

**Wall Machine & Mfg. Co.**  
4513-15 Lincoln Ave.  
CHICAGO, ILL.



## UNITED FLEXIBLE METAL LINED GASOLINE AND AIR HOSE

Use UNITED Flexible Metal Lined GASOLINE HOSE and UNITED Flexible Metal Lined AIR HOSE and bring your station up to the ACME in EQUIPMENT. UNITED Flexible Metal Lined GASOLINE HOSE has been approved by The Board of Fire Underwriters. The largest Oil Companies, Garages and Filling Stations in the country are using our Gasoline Hose. We manufacture our hose in all sizes and attach couplings to fit any make of pump. Send us your requisitions and let us supply you with THE HOSE of the LONGEST SERVICE.

**UNITED METAL HOSE CO.**  
510 W. 24th Street NEW YORK CITY

## KENNEDY Auto Storage Covers

furnish efficient protection for cars in dead storage. They are made of strong, heavy paper, properly reinforced, and in standard sizes to fit any car.

Made only by  
**The Kennedy Car Liner & Bag Co.**  
SHELBYVILLE, IND.

## MILEAGE GALORE

**Will Run 5,000 Miles and More**

These tires are of double thickness and have 12 plies of fabric; therefore no punctures, no blow-outs. They are rebuilt by our special process, vulcanized and double treaded.

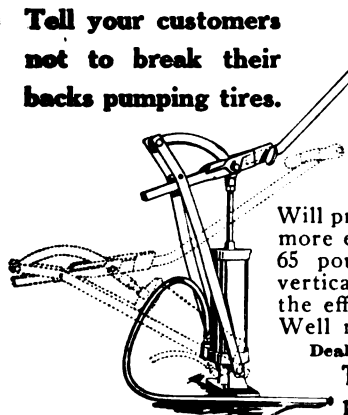
30x3 ..\$4.50	32x3½..\$5.75	34x4....\$7.75
30x3½.. 5.50	33x4 .. 7.50	36x4.... 9.00

Other sizes in proportion. Write for prices today. Send \$1 deposit for each tire ordered, and we will send the tire, balance C. O. D., subject to your examination and approval before paying for same.

**CHICAGO DOUBLE TREAD CO.**  
1235-39 South Wabash Avenue CHICAGO, ILL.

Tell your customers  
not to break their  
backs pumping tires.

## \$500 Jensen Tire Pump



Will produce 90 pounds pressure more easily than you can pump 65 pounds with the ordinary vertical pump, with one-quarter the effort and in half the time. Well made throughout.

Dealers' discounts on request  
**The W. H. Howell Company**  
10 State St., Geneva, Illinois

Prices until  
Jan. 1st, 1917  
Model L, \$ 85.00  
Model H, 115.00  
f. o. b. Peoria

Prices until after  
Jan. 1st, 1917  
Model L, \$100.00  
Model H, 138.50  
f. o. b. Peoria

### A "FASCO" RACING BODY FITS YOUR

**FORD** Made of the very best extra heavy steel and fine workmanship. The lines for "FASCO" were taken direct from the famous French racers. The classiest speedster body on the market. Sold complete, ready to mount on your Ford chassis.

PRICES ADVANCE JAN. 1, 1917

Our supply of materials laid in before the great advance in price will be exhausted by the first of the year. Order yours now, as the 1917 prices will be considerably higher. Write for particulars and specifications today. Agents wanted where we are not represented.



**Fried & Stonier Co.**  
Peoria, Dept. 17 Ill.

# Doings in The Garage and Auto Trade

## Eastern.

**W. H. Rellly**, Newark, N. J., will operate the tile block garage now being built at 80-82 Lock St.

**John O'Neill**, Philadelphia, Penn., is putting up a one and two-story garage at Chestnut and Fifty-fifth St.

**Belrne & Belrne**, Port Jervis, N. Y., have opened the And-Lon Garage at 68 Front St. They will handle the Grant Six.

**Black & White Co.**, Philadelphia, Penn., have opened a new branch at 1726 N. Broad St. and will operate 200 cars.

**Hayward & Gorman**, Harrisburg, Penn., are building a \$6,000 garage at 98 S. Cameron St.

**Roth & Washer**, Allentown, Penn., have opened an auto supply station at 729 Linden St.

**Henderson Garage**, Trafford, Penn., a new two-story, terra-cotta building, has been opened for business.

**Security Garage Co.**, Binghamton, N. Y., has incorporated and will conduct a garage, salesroom and repair shop in the new garage at Exchange and Hawley Streets.

**Ammon R. Smith Auto Co.**, New York City, has bought the Carlisle Ave. Garage. A new showroom will be added and storage room to accommodate 100 cars.

**Allen Motor Co.**, West Bethlehem, Penn., has bought a 170x150 ft. lot at Broad St. and Fifth Ave., and is putting up a first-class garage.

**A. A. Arris**, Chambersburg, Penn., is building a new garage and will take the agency of several makes of cars.

**108th St. Garage**, New York City, is building a 50x100 ft. brick and steel 4-story addition.

**Hartley & Arsenault**, Trenton, N. J., have begun business as the Standard Garage on Quarry St.

**Arsenal Garage Company**, Pittsburgh, Penn., has begun business in its new \$30,000 garage.

**Homer Garage**, Albany, N. Y., has begun a general garage business.

**Brannaman & Newell**, Oneonta, N. Y., have added a new garage to their holdings, having bought the Dibble & Son Wall St. Garage.

**J. Rochester Hill**, Rochester, N. Y., has added to his Babcock garage until a force of thirty-five men is employed.

## Middle States.

**D. E. Snider**, Middletown, Ohio, is putting up a new \$12,000 brick garage.

**Ulrich & Orweller**, Upper Sandusky, Ohio, are remodeling the U. S. Taxi Co. building and will occupy it as a garage and Studebaker, Chevrolet and Mitchell agency.

**Priest Garage**, Jacksonville, Ill., has completed its new cement building.

**Heystek Garage**, Grand Rapids, Mich., is nearly ready for occupancy.

**C. O. Folgate**, Oregon, Ill., has bought the Wilde Bros. garage.

**Oroville M. Farner**, Rutland, Ill., has bought the Ingram Motor Car Co. garage.

**Olin H. Gleese**, Edwardsville, Ill., has been compelled by increasing business to add a second story to his Edwardsville Garage.

**Manlove & Wright**, Cambridge City, Ind., have leased the McCaffrey property and will use it as a garage and salesroom for Cadillac, Oakland and Overland cars.

**E. G. Belden**, Fremont, Neb., has leased the Mounich Garage.

**Johnson & Anderson**, Barronette, Wis., are putting up a new garage.

**Standard Garage**, Chatfield, Ohio, has opened for business; Schnarresberger & Berger, proprietors.

**Ted Field**, Superior, Wis., has materially enlarged his garage space by occupying an adjoining building.

**Bayman & Thompson**, South Whitley, Ind., new proprietors of the Leager Garage, have taken the agency for Chevrolet, Buick and Studebaker cars.

**A. G. Steinberger**, Urbana, Ohio, has begun the erection of a new garage.

**Haugh & Son**, Manchester, Iowa, will add a second story to the Hawkeye Garage.

**Ford Sales Co.**, Flint, Mich., is building a new \$20,000 garage and salesroom.

**Fallon Garage**, Calumet, Mich., has moved to its new brick 50x116-ft. building.

**Lorenz & McClain**, Muncie, Ind., are the new proprietors of the Eaton garage.

**Nelson E. Glibbard**, Charlotte, Mich., has sold a half interest in his garage to Frank Simpson. An adjoining building has been added.

**W. M. Anderson**, Superior, Wis., has bought the garage at 1920 Winter St.

**Robling & Brouillette**, St. Augustine, Ill., have opened a new garage and will specialize in electrical work.

**Lucas & Boyland**, Spring Valley, Ill., are opening a new garage and will handle the Patterson and other cars.

**University Ave. Garage**, Madison, Wis., is materially enlarging by taking over the Olympic theatre building.

**Colombe Bros.**, Calumet, Mich., have opened a garage and salesroom in their new building. Lexington and other cars will be handled.

**Harry Comstock**, Greenfield, Ind., has bought out his partner's interest in their garage.

**C. M. Crapo**, Grand Rapids, Mich., has joined forces with the Kent State Garage & Supply Co. He will handle Oakland, Mitchell and Maxwell cars.

**Red Oak Auto Co.**, Glenwood, Iowa, has bought and will operate the Harney Garage.

**Kirkpatrick Bros.**, Palmyra, Wis., have bought the Cram and Scherer interests in the garage and implement business.

**Trulock & Holmes**, Northboro, Iowa, have begun business in their new garage.

**Chase L. Barton**, Owosso, Mich., has begun construction of his new garage.

**O. A. Rasmussen**, Greenville, Mich., has begun work on his two-story, 70x120-ft. brick and steel garage.

**E. C. Wilson**, Canton, Ill., will add another story to his present two-story garage.

**Decatur Motor Co.**, Decatur City, Iowa, are putting up a \$6,000 garage.

**Harry Miller**, Goshen, Ind., is opening a new garage in the Platter building. He will continue in active management of the Standard Auto Supply Co.

**Union Motors**, Youngstown, Ohio, are opening their new garage, salesroom and service station.

**Alva Molter**, Galesburg, Ill., has bought a building and is remodeling it into a first-class garage.

**Ralph Neville**, Kewanee, Ill., has bought a half interest in the J. J. Huffman garage.

**Butzow Bros.**, Syramore, Ill., have taken the agency for the Bosch magneto and will make it a specialty.

**Small & Sons**, Marshalltown, Iowa, have bought and are operating the Buchanan garage.

**Bowman & Sundell**, Galesburg, Ill., have bought the Norton Garage.

**Gomer Jones**, Bloomington, Ill., is doing a good business as the new proprietor of the Brown Garage.

**C. L. Thayer Electric Garage**, Columbus, Ohio, is moving into its new location at 74 Parsons Ave. The garage is an up-to-date brick building and the business will specialize in electric and storage battery work.

**W. H. Tichenor**, Owensville, Ind., is putting up a fine brick building for a garage and implement salesroom.

## Western.

**James Carr**, Muskogee, Oklahoma, has bought the Shaw garage from F. L. Chapman.

**Steb C. Teal**, Oakland, Cal., has bought an interest in the Dow Town garage and has become active manager.

**Las Vegas Sales Co.**, East Las Vegas, N. M., has put in a salesroom and accessory stock in the quarters formerly occupied by N. O. Hermann. Mr. Hermann has bought the Behl garage and will make a specialty of repainting automobiles.

**Louis Bloemke**, Cobden, Minn., has bought the I. N. Davis garage and will carry agricultural implements in addition to his Ford agency.

**Henry Haroldson**, Aneta, N. D., is now sole owner of the garage in which he and Fred Hedstrom were partners.

**Allen Fields and Ray and Bruce Fields**, Lawton, Oklahoma, are putting up a handsome brick garage. Abundant space will be devoted to an Overland show room and accessory stock.

**John C. Foley**, Cheyenne, Wyo., has begun work on a \$17,500 modern garage building.

**Kortz & Divoll**, Boulder, Colorado, will occupy an \$8,000 garage now being built for them by F. J. Buchheit.

**Siefried & Hopping**, Riverbank, Calif., have bought the Riverbank garage from Cal. Rich.

**Saxon Garage**, Boise, Idaho, are putting on a large addition to the present building.

**Andy Johnson**, Lead, S. D., has occupied his new \$20,000 garage. It includes a large show room for Cole cars and accessories. The garage is one of the largest and best in the state.

**Belt Garage and Auto Co.**, Lead, S. D., has opened a fine show room for its Overland agency.

**Dolores Auto and Novelty Machine Works and Garage**, Dolores, Colorado, is equipping itself with new machinery for any kind of automobile repairs. Smith and Woods, proprietors.

**Har-Mor Garage**, Wellington, Kansas, is greatly improving its location, adding display and accessory rooms and ornamental show windows.

**Story Motor Supply Co.**, Miles City, Montana, is putting up one of the largest and best garages in Montana. The new building will cover about 20,000 feet of ground.

**A. C. Stover & Son**, Syracuse, Neb., are beginning a material enlargement to their present concrete garage.

**Hall & Hoyle**, San Jose, Cal., will occupy the new fire-proof two-story garage building now being erected by Hiram Thompson.

**James P. Ryan**, Fresno, Cal., will occupy the \$9,000 garage now nearing completion on Van Ness Ave., near Stanislaus. The firm name will be Posner Motor Sales Company.

**C. W. Way Co.**, Aurora, Neb., are ready to begin work on their \$15,000 garage.

**E. A. Lowe**, Kearney, Neb., is beginning

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The Disco Electric Starter Corporation of Detroit moved last week into its new factory. The production of the new Disco Two Unit Starting and Lighting Systems will be speeded up by the use of special labor-saving machinery, such as is found usually only in the largest automobile plants.

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Made of frosted aluminum. Will not flatten, wear through or tarnish.

A neat, useful footrest all car owners will appreciate. We also make the Auto Heel Rest used extensively in other cars.

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the erection of a brick garage covering three full lots.

Francis Williams, Baldwin, Kansas, an expert mechanic, is opening a new garage. He will specialize in Ford repairs.

Coliseum Garage Co., Casper, Wyoming, finds its present quarters entirely too small. Work has started on its new brick, 60x120-ft. building.

Jack Wakefield, Vernon, Colorado, will rebuild the old Presbyterian church into a garage.

Edgar H. Scott, Omaha, Neb., has nearly completed his new two-story, 57x132 ft., \$25,000 garage.

Burgess & Winchell, Duluth, Minn., have nearly completed their new garage on Main St.

Walker & Peterson, Everett, Wash., have incorporated their garage business. Capital, \$20,000.

Foss & Hildebrand, Portland, Oregon, have taken the agency of the Owen Magnetic car for their Gibson Electric Garage.

Hampton Bros., Moscow, Wash., have taken the agency for the Enger and Elcar.

Mason & Son, Jamestown, N. D., are compelled by added business to put up a material addition to their present building.

Vincil Bros., Independence, Kansas, have opened their new garage with a public reception. Large salesrooms are a feature.

Yellowstone Highway Garage, Worland, Wyo., will soon open for business.

Thomas Prince, Portland, Oregon, has begun construction on his new \$12,000 garage.

E. J. Romans, Blair, Neb., has opened the North Side garage and repair shop.

Campbell Reckard, Sheridan, Wyoming, are completing their fine garage on West Brundage St. Abundant showroom provided for their Studebaker and Chevrolet displays.

Clarence Tollefson, Kearney, Neb., is building what is said to be the largest and most complete garage and auto salesroom in Nebraska, outside of Lincoln and Omaha.

Tate Auto & Supply Co., Balaton, Minn., are putting in a copper and plate glass front in their new garage.

Halvorson Garage, Willmar, Minn., is putting up a 75x100 ft. brick addition.

Harry Nessley, Mulvane, Kansas, is putting up a 100x150 ft. brick garage.

Loranger & Gray, Havre, Mont., are ready for construction work on their new 60x140 ft. garage.

Neal Thompson, Dalton, Neb., opened his new garage with a public reception and ball.

F. M. Shoemaker, Missoula, Montana, has leased the Chicago Garage and will add improvements which will make it one of the finest garages and show rooms in the state.

Davis & Shook, Scobey, Montana, marked the second large addition within a year to their garage by an elaborate reception. A Ford car was given to D. A. Bostwick as the prize dancer.

Gidley & Forrest, Shenandoah, Iowa, are now sole owners of the garage and Dodge Bros. Motor Car Agency.

Ford Garage, Missouri Valley, Iowa, has completed its new fire-proof garage but will double its size at once.

Misner Garage, Salem, Oregon, has completed additions which give it larger floor space than any other garage in the state.

Engstrom & Sons, Holdredge, Neb., have nearly completed their new garage and salesroom. Allen, Maxwell and Rio cars will be handled.

Somers & Haper, Canton, Kansas, have started a garage and repair shop.

L. H. Snyder, Gove City, Kansas, is putting up a fine cement garage.

W. H. Kikendall, Kearney, Neb., is building an up-to-date garage.

Nelson & Lawlor, Butte, Mont., are remodeling the Nelson Hotel into a garage and automobile salesroom.

Juhnke & Bell, Fairbury, Neb., have moved into their 12,000-ft. garage. It has storage room for 100 cars.

Ben Feldner, St. Cloud, Minn., is making rapid building progress with his new cement block garage.

F. Babcock, Waverly, Wash., is now sole proprietor of the Waverly Garage.

W. H. Pillsbury, Chico, Calif., will occupy the new garage and salesroom being erected on the old Town Hall lot.

Delaware Motor Sales Co., Wilmington, Del., has nearly completed its new brick and steel garage.

Huth & Urquhart, St. Louis, Mo., have leased the modern garage and automobile building at 4152-6 Olive St.

J. Willis Johnson, San Angelo, Tex., is putting up a \$7,000 garage adjoining the postoffice.

Warwood Motor Co., Wheeling, W. Va., will occupy its new 50x100-ft. garage on Warwood Ave. about March 1.

Henderson's Garage, Shreveport, La., did an \$804,924 business in 1916.

Wm. A. Danzer, Hagerstown, Md., has begun a 40x140-ft. garage building on the property he bought of F. T. Elliott.

Kossuth Aycock, San Angelo, Tex., is putting up a new \$10,000 garage.

Smallwood Garage Co., Baltimore, Md., is building a new \$21,600 garage at 1821-5 Smallwood St.

Nacogdoches Garage, Beaumont, Texas, is beginning construction work on its new building. It will have a dust-proof show room and consist almost wholly of stucco, steel and glass.

Adams & Pace, Bentonville, Ark., have opened the Ozark Trail Garage in the building formerly occupied by the Ammons wholesale grocery.

Berry & Allen, Wheeling, W. Va., have bought the Mound City Auto Co.'s garage and will specialize in repair work in addition to garage business under the firm name of Berry & Allen Garage.

Bazzell & Bazzell, Longview, Texas, now operating Good Service Garage, are beginning work on their new garage.

M. E. Crilly, Hagerstown, Md., is building a new garage in the West End.

Secrets Motor Car Co., Monroe, N. C., is making fast progress on its new, fire-proof garage. It will have 7,500 ft. of space. Dodge, Chevrolet, Saxon and Maxwell cars will be handled.

J. M. Nabors, Mansfield, La., is putting up a new brick garage opposite Sheppard Hotel. He will handle Chandler and Oakland cars.

Overland Mansfield Garage, Mansfield, La., is completing its new building next the Bank of De Soto. It will handle the Overland and do a general garage business.

Merrill & Roebuck, Orange, Texas, have begun business in their new garage in the Seargent building.

J. A. Arnette, Charlotte, N. C., has bought the Barney Butler interest in the Thermal Belt Garage.

J. E. Manford, Frankfort, Ky., has begun business with a full stock of accessories and supplies.

Taylor & Conn, Danville, Ky., have begun business in their new brick garage. Bulck cars will be handled.

Knapp & Son, El Reno, Oklahoma, have fitted up a new garage and repair shop in the building formerly occupied by M. J. Clasen.

Gwin Motor Sales Co., Louisville, Ky., are rebuilding the two-story brick, corner E. 3rd and Market, and will use it as a garage and salesroom.

Price Garage, Wheeling, W. Va., is almost completed. It will be a two-story garage and machine shop.

Haywood Garage, Asheville, N. C., will have 16,000 ft. of floor space and accommodate 160 automobiles in addition to show rooms and repair department.

Albert C. Palmer, Frederick, Md., has opened a new garage and Maxwell service station at 252-4 W. Patrick St.

Fisher & Baker, Franklin, Mo., have opened their garage and repair shop.

Cook & McMillan, Franklin, Mo., have begun business in their new garage and repair shop.

### Miscellaneous.

Large cities are struggling with the problem of parking automobiles on the street. A Cleveland suggestion is that the roofs of down-town office buildings be utilized.

Fort Sam Houston will have the largest garage in the world; an army garage for military motor trucks to house 800 machines.

Cylinder heads are bursting all over the northern states; caused by not letting the water out at night or by not adding a non-freezing mixture.

Michigan garage men find automobile accidents are decreasing in spite of the increase in the number of cars. They give as a reason the more intelligent use of headlights.

Community and municipal garages come and go; mostly go, as they never do the work as well nor as economically as public garages.

Injunctions against the building of garages are becoming numerous. Philadelphia is taking the lead in their issuance.

Edward Tuggy, garageman of Riverside, Cal., was fatally injured in an automobile accident.

Eastern railroads are building storage capacity for thousands of cars. All cars subject to demurrage will go into storage, continuing the demurrage but releasing the cars.

A public garage on wheels is the latest California innovation. Ill health caused Alfred Gill to adopt the out-door cure and, being an experienced garageman, he mounted an outfit on a chassis and began patrolling the main-traveled roads with a repair outfit and accessory supplies.

Oklahoma commercial bodies are combining in a campaign to induce tourist traffic to go through their state.

Garages of six stories are becoming common. Boston is the first large city to begin action toward an amendment in the building code preventing the addition of more floors.

Syracuse, N. Y., has abandoned its original intention of establishing zone systems for garages. A compromise was effected by limiting the height to four stories.

A landlord in Las Vegas, N. M., has made forcible attachment for rent due by locking a number of automobiles together with chains and padlocks.

Brooklyn authorities are uniformly deciding against the erection of public garages in strictly residential districts.

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A. D. Perkins, 1777 Broadway, New York City.  
Weston Electrical Instrument Company, Newark, N. J.

## TIME STAMPS

Baird Equipment Co., 324 W. Ohio St., Chicago, Ill.  
Calculagraph Co., New York.  
A. D. Joslin Mfg. Co., 225 W. Erie St., Chicago, Ill.

## TIRE PROTECTORS

The Tireoid Co., 1200 Michigan Ave., Chicago.

## TIRE PUMPS

Imperial Brass Mfg. Co., 529 S. Racine Ave., Chicago, Ill.  
(Wixon Hand Tire Pumps.)

## TIRE TESTERS

Twitchell Garage Co., Chicago.

## TOW BARS

E. K. Sloat, 1304 Woodward Ave., Detroit.

## TRAINING SCHOOL

Machinist Training School, 140 E. Fort St., Detroit, Mich.

## TRUCK UNITS

Commercial Truckmobile Co., 1606 Michigan Blvd., Chicago, Ill.  
Smith Form-a-Truck Co., 1470 Michigan Blvd., Chicago.  
Detroit Truck Co., Detroit, Mich.

## TRUNKS

Kamlee Co., 440 E. Water St., Milwaukee, Wis.

## VALVES

A. Schrader's Son, Inc., 783-793 Atlantic Ave., Brooklyn, N. Y. (Automatic Inflating Valve.)

## VULCANIZERS

Premier Electric Co., 4039 Ravenswood Ave., Chicago, Ill.  
(Premier Automatic Electric Portable Vulcanizers.)  
Vanderpool Vulcanizing Co., Springfield, Ohio.

## WEATHER STRIPS

The Robinson Mfg. Co., 504 Lincoln Bldg., Louisville, Ky.  
(McCormick Allmand Weatherstrips.)

## WELDING APPARATUS

Hercules Welding & Machine Co., 223 N. 16th St., Philadelphia, Pa. (Acetylene Welding and Cutting Apparatus.)

So-Luminum Mfg. Co., 1790 Broadway, New York City.

## WHEEL AND GEAR PULLER

Premier Electric Co., 4039 Ravenswood Ave., Chicago, Ill.  
(“Little Giant” Gear and Wheel Puller.)

## WINDSHIELD WIPERS

The Clear-O-Scope Co., 738 W. Madison St., Chicago, Ill.

## WRECKING TRUCKS

Robt. Holmes & Bro., Danville, Ill.

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Currier-Koeth Mfg. Co., Coudersport, Pa. (“Curko” Socket Wrenches.)

# The Garage *and* Shop Market Place

## AUTO CAPE TOP CO.

Seat Covers. One-Man Top.  
Victoria Tops. Painting.  
Woodwork. : : : : :

Liberal Commission  
to Garage Owners

Calumet 5660

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## EARN \$50.00 WEEKLY

selling Collection Cabinets to Garages, Merchants, Manufacturers and Physicians. Your profit 100%. Cabinets sell for \$6.00, \$10.00, \$20.00, and up; exclusive territory. 80% of merchants doing a credit business will eventually buy. Write today and let us show you how to earn more money.

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## CYLINDER GRINDING SEMI CAST

and

## Standard Cast Iron Piston Pins

QUALITY WORK OUR PRIDE

Our Prices Will Save You Money

## Butler Mfg. Co.

Established 1897  
INDIANAPOLIS

## GARAGE REPAIR MEN

SPECIAL—LOW prices on used Bosch Magnetos, D. U. & R. 4 and 6 Cyl. Also other makes. First Class Condition. Most parts for about 75 different makes of cars. All kinds of bearings. All parts in splendid condition. Prices very low. Immediate shipment.

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## I. Wolf Auto Parts & Tire Co.

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### PROTECT YOUR IDEAS

Many of the best selling accessories and supplies were invented by garage and repair men. Protect the ideas you develop.

A patent, a trade-mark or a copyright may mean the difference between affluence and poverty in later years.

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## Automobile Cylinders

## REBORED AND GROUNDED

PROMPT, EFFICIENT SERVICE.  
PRICES MODERATE.

## STERLING ENGINE CO.

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### ENGINES—A LARGE STOCK SAVING OF 50% TO 75%

50 H. P. Marine Engine, \$100; 30 H. P. Cadillac Engine, \$75; 35 H. P. Continental, \$75; 35 H. P. Wisconsin Engine, \$100; 3 Cyl. Chassis 30 H. P. A. C. Bosch Magneto, \$65.

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Timkin Axles, Transmissions, Low and High Tension Magnetos, and many other parts, at great savings, while they last. Order now before they are gone. Give description of parts wanted.

ROBERTSON,  
1255 North Clark St., Chicago, Ill.

## AAA SCORED CYLINDERS

Repaired by Patented Electric process. Filled with a silver and nickel alloy. (Eliminates Grinding.) No warping or enlarging of cylinder bore. Same piston and rings used. Reshipped 24 hours after received. Also do welding and grinding.

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## LEARN THE AUTOMOBILE BUSINESS

We teach you construction, repairing and driving in 6 to 8 weeks. Special instruction in Acetylene Welding, Knight Engines, Vulcanizing, Electric Starters, Automobile Salesmanship. Greer graduates always in demand. Earn \$150 per month and up.

Courses \$15, \$25, \$50, \$65 and \$150  
Booklet "How to Succeed in the Automobile Business"—FREE. Write today.

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SERVICE. Sheet Metal work that pleases. Fenders, hoods, gasoline tanks, etc., repaired and built to order. CRAFTSMEN METAL CORPORATION, 2815-17-19 Wabash Ave., Calumet 30, Chicago.

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### "DON'T SCRAP ALUMINUM PARTS."

SAVE them with SO-LUMINUM, new, great welding compound; ¼ time and cost of acetylene. No flux—use gasoline torch.

Trial Bar With Full Directions, 50c.  
Booklet 8

SO-LUMINUM MFG. CO.,  
1790 Broadway New York

## STARTING AND LIGHTING EQUIPMENT

Magnetos, Coils, Lighting, Generators, Starting Motors, Magnetizers. We manufacture, sell and repair. Prices right and service the best.

H. B. WEBER & CO.,  
1336 Michigan Avenue, Chicago, Ill.

### ANDRE G. CATELAIN

Everready Automatic Engine Starter. General machine work for foreign and American cars. Welding of all metals. Manufacturer Catelain Hose Coupling.  
1446-8 Indiana Ave. Chicago, Ill.

A big opportunity for garage men and dealers to handle and represent

## THE BRICKEY AUTO HEATER and other high grade AUTO SPECIALTIES

The Brickey Auto Heater will keep a car at parlor temperature in winter. The reasons why it is the only thing to use are—

### Simplicity

Is is the simplest device conceivable and any car owner can readily understand the principle. No exhaust gases are used.

### Price of \$3.90 and \$4.90

for the front and rear heaters, respectively, insures its popularity and ready sale. No cost for fuel.

### Effectiveness

Either heater will send a continuous stream of pure heated air free from gases and fumes.

LET US HEAR FROM YOU TODAY

## THURSTON AUTO SUPPLY MFG. CO.

3020 Michigan Ave., Chicago

Phone Calumet 745

## AUTOMOBILE PARTS

Write for parts wanted and if we have them will quote you lowest prices.

We do welding and machine work of all metals.

Marine engines and supplies.

No catalogues.

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## SPEEDOMETER SHAFTS REPAIRED

Any broken Speedometer Shaft repaired as good as new with our

Patented! Seamless Steel Ferrule.

Parts and Repairs for most any Speedometer (except instruments).

Write for illustrated circular.

### SPEEDOMETER REPAIR CO.

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PARTNER WANTED—A practical car repair man or good salesman; need capital \$5,000. Town of 800. Rich farm county, east Wisconsin. Large, fireproof building, fully equipped shop. Last year's business, \$100,000. Only A1 man need to answer. Address 606, AMERICAN GARAGE AND AUTO DEALER.

GARAGE FOR SALE—In Pennsylvania city 25,000. Excellent location on National Old Trails Road. Long leasehold, plenty of room, steam heat. Tools, fixtures, steam heating plant. County agency for popular selling cars. Have made a hundred sales, and cars are making good. Repair work for tourists requires 3 men. Satisfactory explanation for selling. Address T. H. S., AMERICAN GARAGE AND AUTO DEALER.

SALESMAN WANTED, one with car preferred, to demonstrate and sell automobile accessories. Sales Manager 650 Woodward Ave., Detroit, Mich.





**Ford Owners  
CAN NOW HAVE  
BRIGHT  
LIGHTS  
at Low Speed**

This is only possible with the Aske Automatic Voltage Regulator. Above lights are obtained at lowest engine speed; each lamp operates independently, hence never without lights. Strong, steady beams of light always assured.

Almost five times as much light generated with the Aske Automatic Voltage Regulator.

These are the reasons why it will pay you to supply the demand for this popular accessory.

**Aske Automatic Voltage Regulator Co.**  
Providence Building, DULUTH, MINN.  
Write for dealers' prices and illustrated booklets


**GEARLESS  
DETROIT  
MOTOR DRIVEN  
TIRE PUMP**

**Instantly attached without tools  
or adjustments.**

Now ready for Briscoe, Dodge, Chandler, Hudson, Overland, Reo, Stearns, Saxon 1916 and Studebaker. On and off in a jiffy. Not a rubber diaphragm device. Write for details.

**DEALERS: ASK FOR DISCOUNTS. PRICE \$10**

**DETROIT ACCESSORIES CORP'N**  
529 HILLGER AVENUE :: DETROIT



**Ford Dealers** This New Sloat One-Man TOW BAR Brings in Disabled Cars WITHOUT A DRIVER

**Saves You Time and Money  
Pays For Itself In New Business**

Dealers using the SLOAT One-Man Tow Bar get preference from owners of disabled cars. Investment quickly earned back in time and labor saved, and in paying new business.

**WRITE FOR DETAILS AND PRICE**  
**E. R. SLOAT, 1304 Woodward Ave., Detroit, Mich.**

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Write for book listing over four hundred styles and sizes of

## LYON SPRINGS

We guarantee accurate fit and correct sizes. Save time and money by ordering from Lyon. Prompt shipments.

**Edward F. Lyon Company** 1283 Woodward Ave. DETROIT, MICH.

## The Morris System of Garage Protection

OPEN  
CASH DRAWERS  
AND  
COUNTER  
BLOTTERS

CASH  
CARRIERS  
PNEUMATIC  
TUBES.  
CASH  
REGISTERS

THE  
**MORRIS WAY**  
ENFORCED  
RECORDS

The Morris Cash and Credit Register System furnishes **more** information and protection than any other device on the market at any price.

It forces a receipt to be issued for every kind of cash sale. It forces a charge memorandum to be issued, showing the customer who bought the goods and the amount, and then forces this charge onto your books.

It forces the clerk to issue a receipt showing the amount paid on account, the name of the customer paying and forces this to the credit of the customer on your books. It forces the clerk to issue a voucher for all

paid-out transactions, showing the amount paid, and to whom paid, and at the same time makes for you an unchangeable record of these transactions on a daily record sheet protected by lock and key.

No receipt-issuing cash register at any price, except the Morris Cash and Credit Register, will give you this protection.

We increase your profits without increasing your trade. Sold on reasonable terms.

## Morris Cash and Credit Register Co.

219-22 City National Bldg., Omaha, Neb.

2002 Continental and Commercial Bank Bldg., CHICAGO, ILL.

### Triple "C" Carbon Cleaner



is known for its thoroughness in action, positive cleaning power, freedom from injurious ingredients.

Once used—always demanded.

**Dealers**—Triple "C" is a carbon cleaner that you can recommend with certainty. It will bring you good will as well as profits.

Write for particulars and terms.

Half Pints, Pints, Quarts, Gallons.

**Car Gas Company**

210 Fourth Ave., PITTSBURG, PA.

### Clear-O-Scope WIND SHIELD WIPER



**\$1**  
Live  
Dealers  
Sell  
Thousands

**CLEAR-O-SCOPE CO.** 738-40 W. Madison Street, CHICAGO



### TRUNKS FOR AUTOS

THIS MEANS THE  
**KAMLEE**  
COMPANY  
440 E. Water St. Milwaukee

Trunks for all makes of cars and for all purposes  
Dust-Proof, Rain-Proof, Strong, Light, Convenient, Handsome  
Liberal Profits for Garagemen and Dealers. Send for our proposition



### RIVES' AUTO-PEDAL NEVERSLIP PADS

Make Driving more comfortable and prevent feet from slipping.

**Full Set \$1.00**

ATTACHED TO ANY CAR IN A MINUTE.

Close dealer co-operation insures quick sales. Write for proposition.

**Geo. H. Rives Mfg. Co.** 2187 Woolworth Bldg., New York

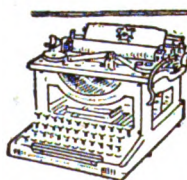
### GARDEN CITY SPRING WORKS

Manufacturers of

### AUTOMOBILE SPRINGS

2300 ARCHER AVE.

CHICAGO, ILL.



### TYPEWRITERS

Underwoods, Oliviers, L.C. Smith, Remington, Smith Premier and other makes  
\$30.00 \$25.00 \$27.00 \$15.50 \$16.50 \$15.00 and up  
Expert repairing and rebuilding. Every machine in perfect condition and guaranteed 5 years. Write for our liberal free trial offer and cut rates prices.

**ALL-MAKES TYPEWRITER CO.**

162 North Dearborn Street - - CHICAGO, ILL.  
PHONE CENTRAL 6035



**Big Money in Springs  
If You Take This Tip  
Says No-Worry-Springs**

When a spring breaks the car owner comes to you in no happy state of mind. For goodness sake don't sell him another spring that will do the very same thing.

Sell him a Tuthill Titanic Spring and you do yourself a big favor as well as the buyer. Because Tuthill Titanic Springs don't break. They have no weakening center hole or center nib. They're guaranteed never to break at the center, where three out of four breakages come.

Spring breakages end when Tuthill Springs go on. Sell Tuthill Titans and every buyer will boost for you.

You get better delivery service on Tuthill Titans than on any other. Your distributor is always ready to make immediate shipments on stock orders, and we fill his orders the same day received. Even special orders go out within a couple of days or so.

Write for our new 1917 price list—the most complete price list of springs ever published.

**3 out of 4 spring breaks  
are at the center**

**TUTHILL**

*Lubricated*

**TITANIC SPRINGS**

**are  
guaranteed forever**

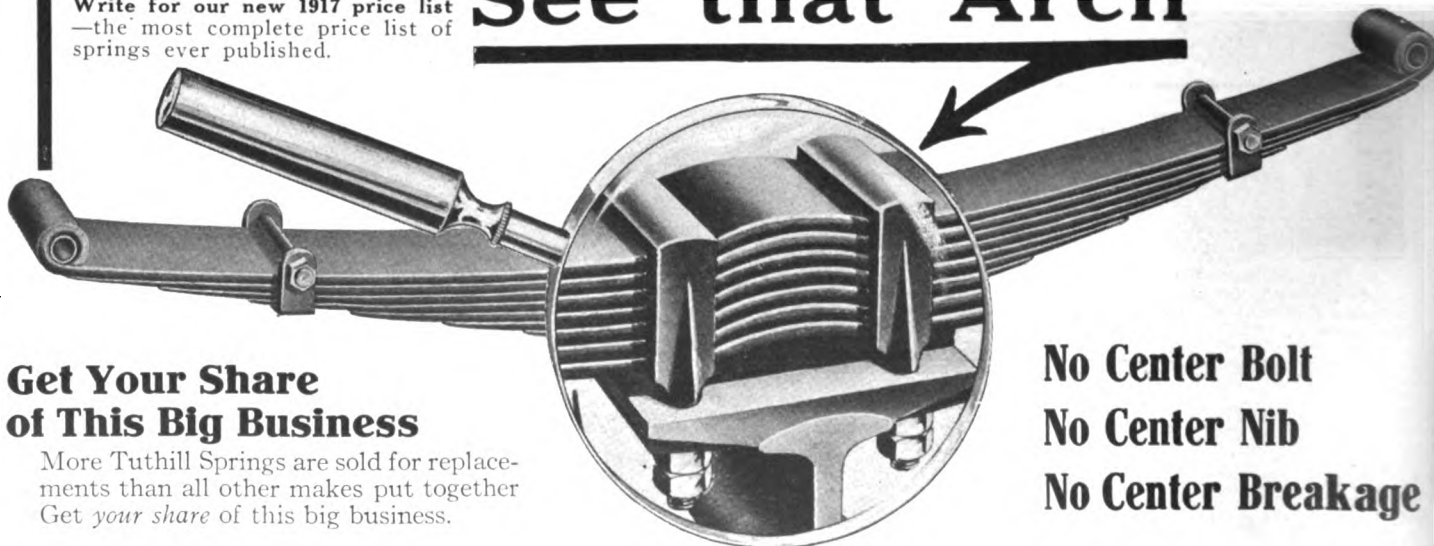
**against center  
breakage**

**No Increase In Prices**

**TUTHILL SPRING CO.**

**760 Polk Street, Chicago, Ill.**

**See that Arch**



**Get Your Share  
of This Big Business**

More Tuthill Springs are sold for replacements than all other makes put together. Get your share of this big business.

**No Center Bolt  
No Center Nib  
No Center Breakage**



# A New Departure

## TWIN FIRE

**T**HERE are three principal reasons why the Twin Fire Spark Plug has leaped out beyond all others:

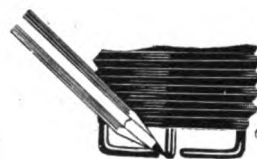
**Reason No. 1**—It fires two series sparks. If one point becomes foul the other continues to fire.

**Reason No. 2**—In the above condition the fouled point is cleaned by the continual hot explosions.

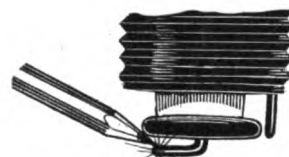
**Reason No. 3**—Twin Fire sparks are double intense, without increasing the consumption of current.

Motorists have wanted just such a plug—they've been troubled with shooting oil and carbon deposits and Twin Fire plugs come as a distinct need.

Get the particulars of our dealers' proposition—it will earn you splendid profits. Write or wire today.



Ordinary plug is dead when clogged or sooted.



Twin Fire always sparks. If one point becomes clogged the other continues firing, cleaning the fouled point.



### TWIN FIRE SPARK PLUG CO.

658 Woodward Avenue

Detroit, Michigan

## Price \$1.00

Liberal discount  
to dealers



# Get "in" on this!



Profits are pouring into dealers hands through Inland Piston Rings.

A whirlwind campaign of corking big ads is now appearing regularly in the Saturday Evening Post, Collier's, Literary Digest, motor magazines, etc. The whole motor-ing public now knows that there is

**an absolutely gas-tight piston ring in one-piece at a one-piece price.**

Thousands of engine owners who would not consider higher priced rings or less efficient rings at any price, will gladly pay the *Inland* price for a perfectly gas-tight piston ring.

**Get our deal to dealers quick**

The *Inland* is not "just another piston ring"—its combination of qualities cannot be had in *any* other piston ring at *any* price. Not an experiment—in use by 100,000 cars. Standard equipment on Franklin, Kissel Kar, Pathfinder, Apperson, Weidely motors, etc. Write now!

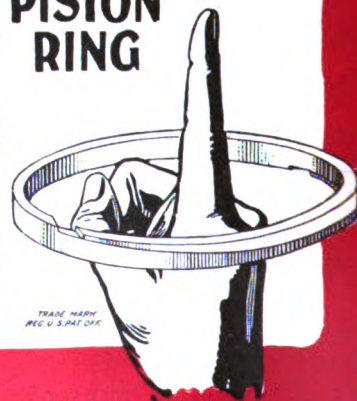
**Inland Machine Works, 817 Mound St., St. Louis, Mo.**

## INLAND **1** PIECE PISTON RING

Low priced because one-piece. Absolutely gas-tight because it has no gap and the spiral cut causes it to expand in a perfect circle, giving even pressure against entire inner circumference of cylinder.

Strongest and most durable because equal width and thickness all around.

**Fully guaranteed.**



TRADE MARK  
REG. U.S. PAT. OFF.



# AMERICAN GARAGE AND AUTO DEALER



Volume 7  
Number 10

CHICAGO

MARCH, 1917

\$1.00 Per  
Year



## Ample Horse Power for Any Hill

The Russel Internal Gear Drive Axle is 92 per cent efficient under all conditions of road and load—and at all speeds.

The solid round bar load-carrying axle takes care of the load while the drive axle delivers the maximum power near the rims of the rear wheels.

That is why the motor truck, equipped with the Russel Internal Gear Drive Axle, takes the steepest hill with comparative ease.

Can you ignore this fact in the purchase of your next truck?

# Russel



**== Fair List Prices ==**

**== Fair Treatment ==**

# GOODRICH

## BLACK SAFETY TREAD TIRES

### Must Make Good

**W**HEN a Goodrich Black Safety Tread Tire is sent from the factory of the B. F. Goodrich Company, it carries Goodrich's avowal that it is free from imperfection of material and workmanship.

It is the best non-skid fabric tire, the oldest, largest, most skillful rubber manufacturer can make.

It *must* render service worthy of the good name it bears—the high service Goodrich requires of it.

If, as occurs in rarest instance, it fails, the B. F. Goodrich Company is more eager than you that its shortcoming be made good.

Where You See This Sign  
Goodrich Tires are Stocked



Ask Your Dealer for Them

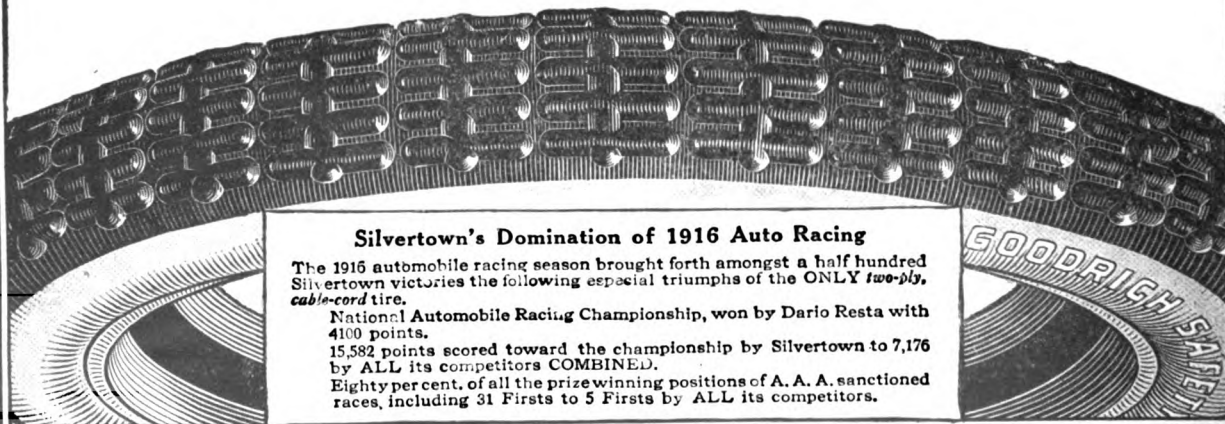
### *Fair Treatment Open-Handed*

The B. F. Goodrich Company *courts* honest fault-finding with its tires. Goodrich Fair Treatment will meet these complaints with adjustments, quick and square,—will make these adjustments gladly and generously.

It will not permit a Goodrich patron to feel that a Goodrich tire owes him anything. *It wants back any Goodrich tire you feel owes you anything.*

**The B. F. GOODRICH COMPANY, Akron, Ohio**

Also maker of the tires on which Dario Resta won the official 1916 National Automobile Racing Championship—Silvertown Cord Tires



#### **Silvertown's Domination of 1916 Auto Racing**

The 1916 automobile racing season brought forth amongst a half hundred Silvertown victories the following especial triumphs of the **ONLY two-ply, cable-cord tire.**

National Automobile Racing Championship, won by Dario Resta with 4100 points.

15,582 points scored toward the championship by Silvertown to 7,176 by ALL its competitors COMBINED.

Eighty percent. of all the prizewinning positions of A. A. A. sanctioned races, including 31 Firsts to 5 Firsts by ALL its competitors.

**"Best in the Long Run"**



# AMAZON TIRES

## *At Last—a "Different" Tire!*

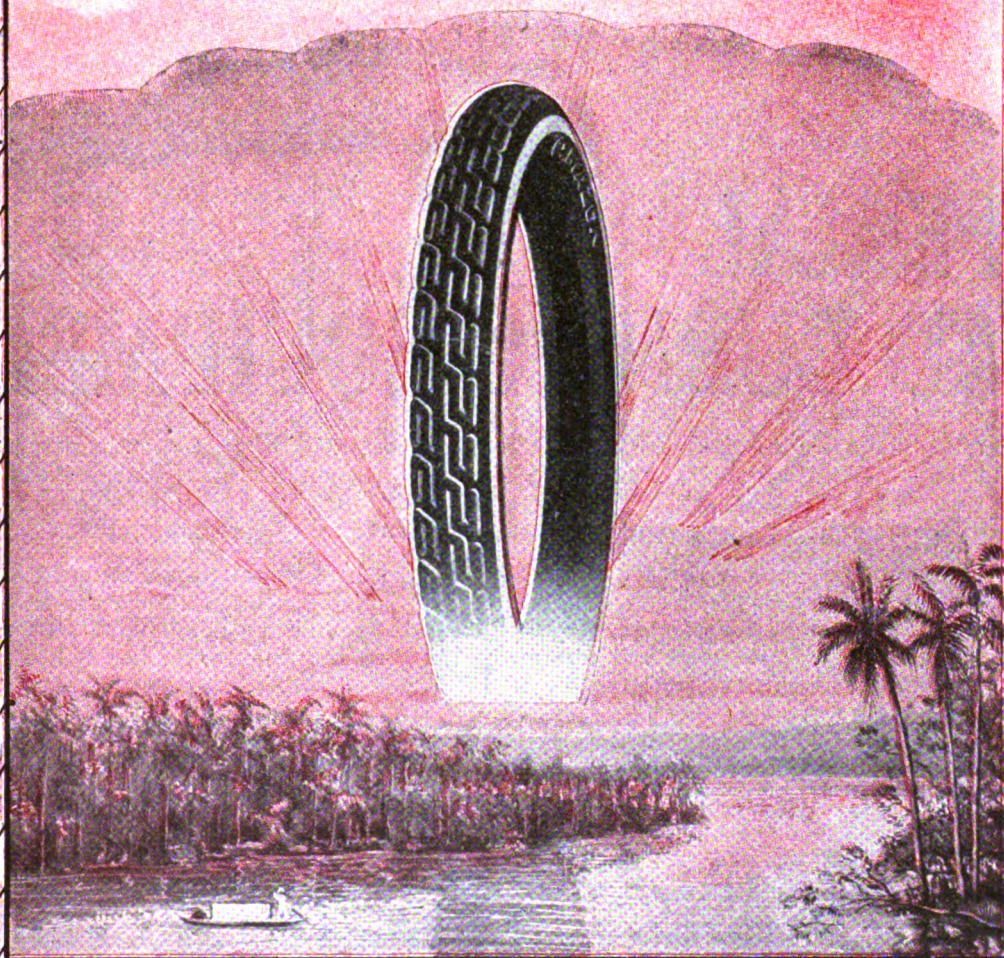
Not a freak or fancy, but a high quality pneumatic tire of superior merit, reinforced for greater strength and protection against blow-outs by extra fabric breaker strips on the side walls.

Built by Akron's most experienced tire engineers, from choice materials and incorporating "year-in-advance" improvements, they stand forth as the last word—the ultimate, in tire building!

For the dealer who is seeking a worthy tire to handle on a profit-building basis, the AMAZON tire and Proposition represent a connection that has no equal.

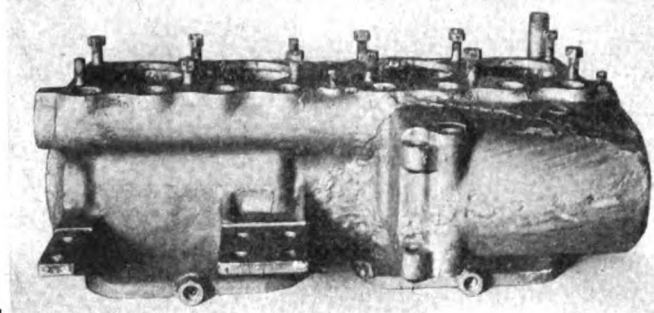
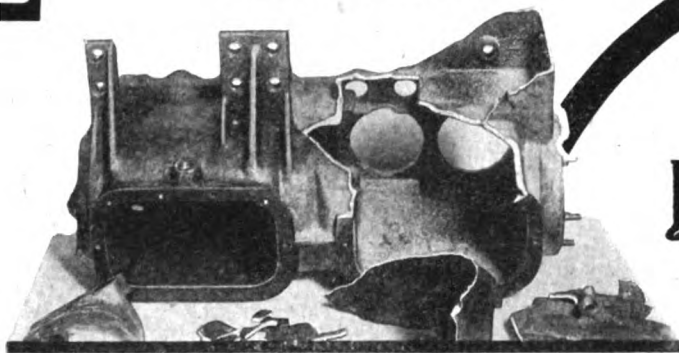
Now is the time to select your territory for exclusive selling rights. Write us!

**The Amazon Rubber Company, Akron, Ohio**





# 2 PROFIT MAKERS FOR GARAGES



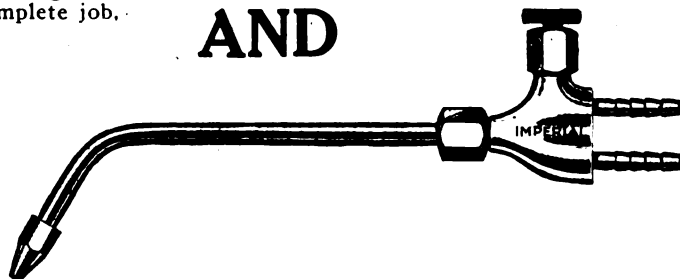
The above was an E. M. P. 30 Aluminum Crank Case broken by a connecting rod coming loose. It was prepared for welding in 3 hours. The pre-heating took 2½ hours. The welding 45 minutes. The complete job, as good as new, cost \$20.00.

## IMPERIAL WELDING EQUIPMENT CUTTING OXY-ACETYLENE PROCESS

No garage equipment is complete without one of these outfits, which welds anything in metal and cuts anything in wrought iron or steel.

The cost of the outfit is small. The opportunity for profitable repair work is unlimited—work that otherwise could not be touched. It is also a service greatly appreciated by patrons, when, in a few hours, a part can be made whole which otherwise would have to be replaced by a new one after days or weeks of delay.

AND



# IMPERIAL LEAD BURNING EQUIPMENT

This outfit enables you to burn storage battery plates and do other custom lead burning quickly and efficiently. Four styles are furnished, depending upon the gases you wish to use: No. 20, for acetylene and oxygen; No. 21, for oxygen and hydrogen; No. 22, for hydrogen and compressed air; No. 24, for illuminating gas and oxygen.

The apparatus is adapted to nearly every condition of the shop, at minimum cost, insuring the greatest possible safety. It consists of a small torch with a needle point flame, best adapted to the purpose, together with gas regulating equipment. If you already have an Oxy-Acetylene welding outfit, the lead burning torch, bench block, hose and connections are all you need buy.

New literature just issued upon both of the above equipments, giving complete descriptions and valuable data.—Write for full information now.

## THE IMPERIAL BRASS MFG. COMPANY

529 S. Racine Avenue, CHICAGO, ILL.

DEALERS :

Send for  
FREE  
Copy of  
"SNAPS"



"SNAPS"  
is Sent  
to Dealers  
ONLY!

*We Occupy this Entire Building—Finest and Handsomest Structure in the United States Devoted Exclusively to Wholesale Auto Supplies and Hardware*

# Through Service We Succeed!

**We are the fastest growing wholesale automobile accessory jobbing house in America—30,000 dealers know us favorably through having done business with us.**

We were the first to inaugurate, and practice, on a national scale, our system of selling to merchants from our monthly catalog "SNAPS" known all over the country as "The National Bargain Directory of Automobile Supplies." Our system enables us to place before the accessory dealers of this country a new, fresh assortment of choice merchandise every 30 days.

By mailing a complete catalog monthly, we keep the dealer in touch with the latest and best that the market affords. We do not have to anticipate a rise in prices in quoting you, and therefore, you have the advantage of the lowest prices current at any time.

We buy for cash and we sell for cash—therefore we are able, and do give you, the full benefit of the lowest prices at which our quality of goods can be bought. We are selling millions of dollars worth of auto supplies and hardware per year—therefore we can afford to take a very small profit on each item—the big volume makes this possible.

This business was founded with a small capital and a big idea—the idea of SERVICE. We have taken the meaning of SERVICE in its broadest sense. And each day, each month we have found a new and still broader meaning. And now we understand that SERVICE means all things that go to make life easier and business more profitable for the dealers we serve.

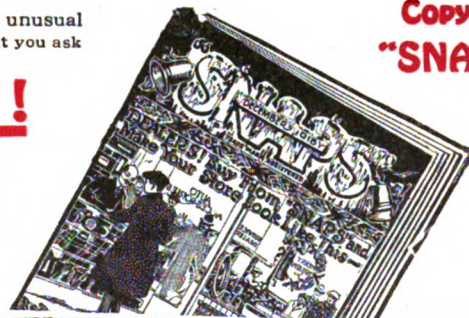
We guarantee to ship 90% of our orders within six hours from receipt. Only orders for unusual special items are occasionally held longer. We guarantee to return your money to you at any time that you ask for it—and it makes no difference whether you want it back for a good reason—or for no reason at all.

## WE SELL WHOLESALE ONLY!

We only accept and fill orders from qualified dealers and garage men who buy to resell. No consumer order ever gets by our "Turn Down" department. We will not compete against our own customers and therefore we protect the dealer absolutely. From thousands of dealers we have earned the title of being their "Chicago Partner"—why don't you, too, send for a free copy of "SNAPS" the National Bargain Directory of Auto Supplies? Be sure to use your letterhead so that we may know you are a dealer and entitled to "SNAPS."

## LET US BE YOUR "CHICAGO PARTNER"

Send for  
FREE  
Copy of  
"SNAPS"



**SERVICE MOTOR SUPPLY CO. 1523 25 27 29 31 CHICAGO, U.S.A.**  
Michigan Blvd





## WON'T HURT THIS SPARK PLUG



**N**OW you can sell a Spark Plug that really overcomes soot and oil trouble. Here's the plug which stands alone in the field—its exclusive features make it the ideal plug to sell.

### TWIN FIRE

**F**IRES two series sparks, using the same amount of current as the ordinary plug. The result is double intense sparks—complete combustions. Adds a world of energy to each explosion and banishes Spark Plug trouble. Put a set in the motor—then forget them.


If one point clogs, the other continues to fire. Constant hot explosions soon cleans the fouled point. That is a feature found **ONLY** in Twin Fire.

### The Only Plug That Fires Two Distinct Sparks

There isn't another multi-point Spark Plug on the market that can possibly do the same work as Twin Fire, simply because Twin Fire fires **TWO SERIES** sparks. Test any other multi-point plug—clog one point and no other point **CAN** fire. Then test a Twin Fire in the same manner.

Twin Fire means greater plug efficiency—greater satisfaction, greater sales and greater profits. There's a big demand for Twin Fire Spark Plug and every user spreads the good news of the plug that does such splendid work.

The retail price is only \$1.00 and there's a liberal profit for dealers. Ask us for particulars of the dealer's plan and begin at once to cash in on this new-departure plug.



The ordinary Spark Plug **CAN'T** fire when one point is clogged with soot or oil.



Twin Fire Spark Plug **always** fires. If one point clogs, the other continues to fire and the hot explosions soon clean the fouled point. This is not the case with any other plug on the market—it's an exclusive, big-selling Twin Fire feature.

# Twin Fire Spark Plug Company

658 WOODWARD AVENUE DETROIT, MICHIGAN

# AMERICAN GARAGE AND AUTO DEALER

*Published Monthly*

## AMERICAN GARAGE AND AUTO DEALER (Inc.)

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Guaranteed Circulation this Issue 15,000 Copies

# "NORMA" BALL BEARINGS

(Patented)



As determining the capacity of a car or truck for rendering high-class service, no single item however small can be considered of minor importance. For instance—a broken or sluggish or inefficient bearing in magneto or lighting generator or starting motor will so cripple these accessories as to destroy their functions in the unit performance by which the car or truck will be measured.

All the higher-grade magnetos and lighting generators are built in the full knowledge of the responsibility they must bear in the total performance. Which explains why they are, almost without exception, fitted with "NORMA" Bearings of proved speedability and serviceability.

Be Sure — See That Your  
Electrical Accessories  
Are "NORMA" Equipped

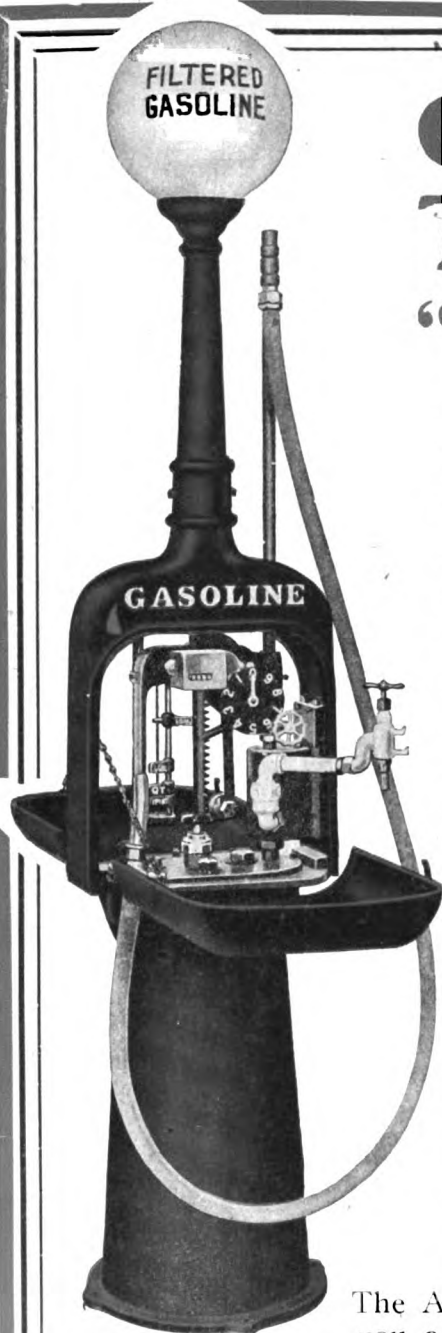
## THE NORMA COMPANY OF AMERICA

1790 BROADWAY

NEW YORK

Ball, Roller, Thrust, Combination Bearings



**CURB PUMP No. 101**

# CURB PUMPS THAT BUILD "GAS" BUSINESS

The live dealer of today realizes, in this time of keen competition, that he must "build his business." By creating a confidence; by rendering prompt and efficient service, he builds a steady and regular patronage.

Proper equipment is necessary to build a gasoline business.

American **Curb Pumps** are designed and constructed to meet this demand.

The American Curb Pump No. 101 is **double acting continuous flow**, delivering 14 gallons of gasoline per minute. It is designed to render a rapid, accurate service and costs less than other pumps performing the same work.

The **accessible valve** feature makes this pump easily and quickly inspected and cleaned, insuring accurate measurement at all times.

Is regularly equipped with large filter; **discharge register with large clock dial**; meter, which registers up to 100,000 gallons, then repeating; stand pipe and hose draining valve; electric light fixtures; "Filtered Gasoline" sign, etc. Equipped with threaded quantity rod—an exclusive "American" feature. This insures quantity stops in rigid fixed position, impossible to move without removing seal on pump.

The American Curb Pump will build you a steady gasoline business.

## American Portable Wheel Tanks

There is a need in every public and commercial garage for the American Portable Wheel Tank. They save your men's time in filling cars in your garage; are a convenience and money saver to every business. Are equipped with the double acting continuous flow pump same as furnished on the high grade curb pump. The American Portable Wheel Tanks are built to last and are reasonably priced.

*Write for bulletins on all styles and types of Pumps, Oil Storage Systems, etc.*

## American Oil Pump & Tank Co.

Cincinnati, Ohio



# AMERICAN GARAGE AND AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE,  
GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. VII. No. 10

New York — CHICAGO — Detroit

March, 1917

## Spring Business

**I**N THIS issue of the AMERICAN GARAGE AND AUTO DEALER we are devoting considerable space to spring business. Now is the time to become active if you have not already done so. If you have, the time is here for intensified activities.

The liveliest of the live wires in our trade have many cars sold for March and April delivery. We know garagemen and dealers in small towns who have sold beyond the ability of one factory to deliver; they are taking on additional agencies in order to match up supply with demand.

Many dealers are increasing their stock of accessories, are extending their line of publicity and advertising, are working mailing lists, and are bent upon making the spring of 1917 a record-breaker.

This journal is most interested (in considering this problem just now) in the class of garagemen throughout the country who are doing a nice storage and repair business, who sell gasoline, tires, spark plugs and a few of the other staples, but who have really not gotten into the motor supply merchandise game. In this issue we are urging all such to become active at once. Send for catalogs and make them work for you. With the advent of spring weather motorists will come flocking into your places of business in just the frame of mind to buy many or all of the new and nice things that have come upon the market since last season, as well as many of the staple articles. Be ready for this trade. Suggest the purchase of particular articles that the personality and habits of the customer will indicate. He (or she) will not regard this new interest of yours as an intrusion but will recognize it as a desire on your part to increase your service to him (or her) and make your business more responsive to the growing requirements of a growing clientele.

Let every garageman and dealer have a housecleaning this spring. Make your place of business more inviting. Trim up your show windows, partition off an office and show room if you have not done so. A sample of the car you are agent

for may be standing under a cob-webbed ceiling, and yet it represents about the same value as a Steinway piano—and who ever saw a Steinway piano displayed under such circumstances? Don't forget that the women represent half or nearly half of the motoring public and they have an eye for neatness and artistic effects—and a dirty, grimy, greasy, unkept garage will repel instead of attract them, as well as a large element among the men.

Spring business this year should break all previous records. The country never was so prosperous. The motoring fever will register its highest temperature. The sowing has been bountiful. Be ready for the harvest.

## Business Helps That Go to Waste.

**T**HERE are many available business helps costing thousands of dollars that go to waste through indifference and sloth—failure to recognize and apply them.

The garageman and dealer is guilty of this form of extravagance, carelessness and lack of true conservation methods. He pays for something that he doesn't get and his failure to get it is his own fault, and his alone. We refer to the mine of suggestions for buying goods and services that are set forth from month to month in the advertising pages of this journal.

Every proposition that will make you money, every equipment for your garage, store, office or shop that will reduce your cost or add to your establishment's efficiency, every proposal that will stimulate and energize your business, which is advertised in this space and fails to circuit into your operative scheme, short-circuits dollars that ought to be yours.

This space costs big money, the talent employed in making the space productive for you and the advertiser is highly skillful and specialized. Don't let it go to waste. Be alert and active. Read every advertisement—*then act*. Snap up the new agency offered before it is too late. Install the new equipment or service at once. Buy the new

novelties while they are new and novel. Take advantage of every phase of this costly (to those who pay for it) and cheapest of all (to you) publicity merchandising service. It will pay 1,000,000 per cent on your investment in postage stamps.

### Sell Motor Apparel

WITH the opening of spring business large quantities of motor wearing apparel will be sold. There is a contagion at this time of the year for new toggery, and this contagion sweeps the multitude off their feet into the clothing stores and modiste parlors. There they buy the ordinary spring wear.

But when it comes to motor toggery, they are more apt to think of it when at the garage than anywhere else. Garagemen and dealers who carry no stock of motor coats, dusters, wraps, caps, veils, gloves, etc., should have on hand catalogs which adequately set forth the merits of these goods. We of the garage trade will have a dozen opportunities to suggest purchases of this sort where the clothing man and modiste will have one. Why not get into the game along with the first robin's chirp, thereby extending your service to customers and increasing your aggregate profits? Show your trade that you are alive, that you know what is doing in the toggery line, and that you are the representative of one or more houses who carry warehouses full of the very latest creations for wear.

The merchandising end of the garage business has wonderful possibilities. An easy way to get into it is through the use of catalogs. The catalog wholesaler in the old days meant Butler Brothers—now their names are legion. The retailer who takes orders from catalogs inevitably becomes a retailer who carries stocks. He learns what the trade require and has the goods on hand. There will be thousands of garagemen and accessory dealers who will go into the wearing apparel business this spring, many of them by the catalog route. Why don't *you* try it out?

### Insurance Discrimination Victims

THE auto business is being grossly discriminated against by the fire and casualty companies. Garagemen, dealers, shopmen and supply men are the victims of the rankest kind of overcharges for the protection they receive. The hazards in our line may once have warranted present rates, but that time has long since passed, yet the Rip Van Winkles of the rate-making boards persist in sleeping on.

There is a remedy for this frightful condition. Only the unwise and unprogressive need continue

to be robbed. The remedy has been found by lumbermen, hardwaremen, grocers, druggists and nearly all classes of retail men who have been even less unjustly dealt with, to say nothing of jobbers and manufacturers. It has also been applied. The name of the remedy is *Inter-insurance*.

Readers of the AMERICAN GARAGE AND AUTO DEALER can save from 10 to 70 per cent of their present insurance cost by writing this office for full information. Many have already done so. One saved \$425.00 on a single year's fire insurance. All others have saved 10 per cent or more, for this saving is *guaranteed*. Why should *you* continue to be mulcted by the insurance trust for the benefit of its pocket-bulging magnates?

### Meaning of the Service Station

AS a rebuke to the garage and repair shop element in the retail and service branch of the automobile industry, the service stations owned by manufacturers and operated directly or indirectly by them serve an excellent purpose. In the degree that the functions performed by the service station are assumed and properly discharged by independent garages and machine shops will the service station disappear from the face of the earth.

The manufacturer has his hands full as a manufacturer in a growing industry like ours. It takes every ounce of energy he may possess to keep up with the productive requirements of a well organized business based on a properly exploited product. When he goes into any other branch of the business, he does so from necessity rather than from choice, and he withdraws therefrom as quickly as conditions will permit.

Manufacturing is a specialty, jobbing is a specialty, and the business represented by the retailer and repairer is a specialty, each of which requires the undivided attention of specialized talent.

The service station is a sign of warning to the garage and repair fraternity against inefficiency. It is a symptom that the garage and repair shop is not functioning properly. The remedy is to concentrate on the problem in hand and meet every reasonable demand the ever-changing conditions place upon us.

Let the slogan of the garage and repair shop element in our trade be: "To oblivion with the service station!"—because it has no place in a system in which each element functions up to as nearly 100 per cent as possible, and this should apply particularly to the retail and repair branch thereof.

# Spring Business for Retailers

## Garagemen and Dealers Will Harvest Profits in the Spring Retail Buying Movement Now Opening Up—Sell from Stock and Catalogs

*Editor's Note—These articles are written by experts and are replete with suggestions for making the merchandise activity of the garage and auto salesroom more productive of profits. Big institutions like Marshall Field's cannot be imitated but their methods suggest improvements applicable to the smallest business.*



The Manager, Motor Utilities Section,  
Marshall Field & Co.'s Great Retail Store.

JOSEPH J. PARMENTER, manager of the motor utilities section of Marshall Field & Co.'s retail store in Chicago, opens an interview with a staff representative of the **AMERICAN GARAGE AND AUTO DEALER**, with the following statement:

"Spring, did you say? Yes, it is opening up even now in a small way and enough to indicate that the big, dominating, featuring fact of 1917 spring business will be equipment needed for long distance touring."

"What I mean by this is that camping, cooking and lunch outfits, tents, trailers and the like will be big sellers this spring. We have already outfitted a number of our customers and the inquiries for this class of goods is sufficiently large to amount to a rather startling innovation.

"The drift is away from the boulevards and into the open country. This coming season all records will be broken for cross-country tours, interstate tours and week-end tours."

Mr. Parmenter believes that the improved health statistics are directly traceable in an important degree to the automobile. Tuberculosis is on the decline and has been steadily declining since the advent of the motor car. Fresh air and the open country, besides constituting a mental hygiene measure, is certainly prophylactic as well as curative in its effect upon incipient pulmonary diseases.

This motor utility section is said to be the last word in merchandise display, store furnishing and equipment. The interior view shown in this article indicates the possibilities of automobile accessory merchandising. The show cases are as ele-

gant and artistic as those found in the millinery, dry goods and jewelry departments of the same establishment, and the room is carpeted and trimmed in much the same manner. The lesson of this to garagemen and dealers throughout the country is that this line of goods readily lends itself to the most effective sort of display, and that customers are being educated to have neat and pleasant quarters where they can supply themselves with the widest possible equipment and accessories for the car.

### The Seasonable Goods to Push.

When asked concerning the various items referred to by Mr. Parmenter in his opening statement, he said that the camping outfits which were making a hit with customers were quite complete affairs and included tents, spring beds with mattresses, stove and cooking utensils, etc., and prices ranging from \$40 to \$200, according to the degree of completeness and size of party for which the outfit is intended. Cooking outfits sell from \$5 to \$50, lunch outfits at the same range of prices, while tents run as high as \$40, trailers at \$200, the latter varying with the amount of equipment going with them.

Another feature of spring business, which has obtruded, but not intruded, itself thus early in the season, is the demand for ornaments for the car. Radiator flags with attachment sell from \$2.25 to \$2.50. The novelty in this line is a flag illuminator which attaches to the radiator and sells at \$2.25.

Other items which will attract the attention of tourists, are tow lines; they are at times not only useful but indispensable

and retail around \$4. Collapsible steel shovels and buckets made of canvas, which sell around \$2, collapsible drinking cups from 25 cents to \$1, pneumatic jacks which connect with power or hand pumps selling at \$6, a switch which operates the horn from the steering gear priced at \$1.25 to \$4, rear signal foot brake connections which flash the word "Stop," selling at \$12.50; a submarine tire trunk which is absolutely water and dust proof priced at \$17.50 to \$19.50, canvas chairs and folding table for party of six sells at \$15, with smaller outfits down to \$8. These are some of the new things on the market this spring.

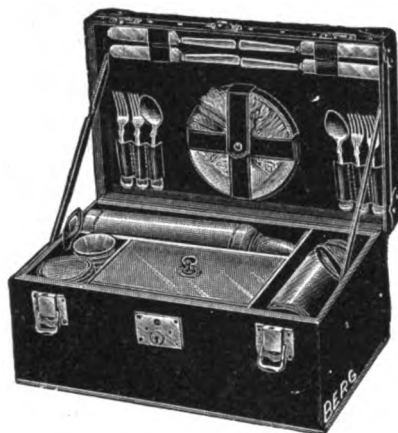
### Makes Long Trips Himself.

Mr. Parmenter has made several overland trips with his family and in this way gathers first-hand information regarding requirements of the motorists. Last season he found the megaphone of great assistance. In passing a farm near Batavia, N. Y., he encountered a cross-road where the Blue Book directions were not quite clear. He noticed a farmer beyond the reach of the ordinary voice, but reached him through the megaphone. The farmer signaled "straight ahead" in reply to the tourist's inquiry and time and shoe leather were thus saved. He highly recommends the carrying of a rim tool; it saves time and temper. They retail from \$2 to \$3.

The prevalence of car thefts makes it almost unnecessary to suggest that the tourist requires locks as an indispensable equipment to his car, and an expenditure of from \$5 to \$15 insures safety in a degree that has caused the theft insurance companies to reduce their premiums from about 40 to 15 per cent.



Mr. Parmenter is a believer in preparedness for the motorists when he takes to the open road. The car should be oiled thoroughly, particularly the transmission and differential. Oil caps should be filled before starting and the car should be equipped with spring oilers which work automatically. An extra supply of bulbs for



Lunch Outfit.

head lights, tail lights and side lights should be carried along with inner tubes, patches, chains, etc. The tire pump should be in first-class order. When the start is made and where liability to encounter crowds of congested traffic, a mirror or a danger signal should be a part of the car's equipment. This is all very suggestive to a garage salesman who is starting a patron off on a long trip.

Some new items will be of interest. A gradometer which shows the percentage of grade the car is ascending or descending will attract much attention this season. It sells at \$2. Electric cigar lighters for the auto are something new. They work as well on the pipe as the cigar and sell from \$5 to \$7. The new auto danger signal with a red hand shooting out from a mirror sells at \$5. Great comfort in riding is obtained from the use of air pillows which are leather and silk covered and sell from \$2.25 to \$8. There are also curved pillows made of curled hair with leather covers selling from \$4.50 to \$5.50. Cars that ride easy at the start-off are seemingly not so easy later on in the trip and these pillows lessen the jolt, even though your shock absorbers are working up to their highest efficiency.

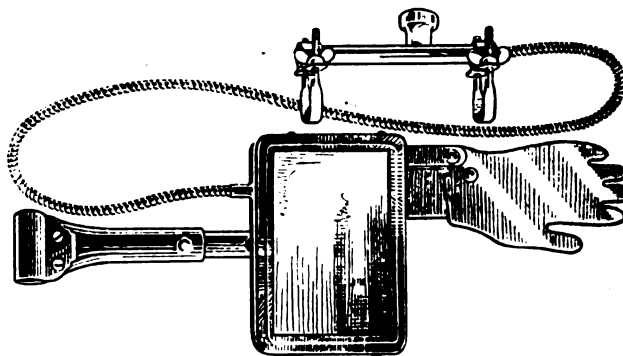
### Wearing Apparel Not to Be Neglected.

Field & Company are not neglecting the wearing apparel side of the business. Neither should any garageman or dealer, no matter what his location. Every motorist should have a duster, and dusters sell from \$5 to \$15. Caps for summer driving sell all the way from 50 cents to \$2, the higher priced article having special ventilation vents. Veils for women tourists find a ready sale and many are purchased on the spur of the moment. The local garageman and dealer should get his share of this business.

Goggles are indispensable in driving and riding. Every member of the party should

apply to the small business as well as to the large one. While automobile accessory jobbers are experts in this class of merchandise, including many novelties, there are many striking and effective articles that can be picked up by the keen buyer from quite unusual sources. Store owners should always be in a position to take advantage of buying conditions for much of the regular stock. This stock should be sweetened up both from the standpoint of cost, quality and variety by bargain or special purchases."

"On the selling end of the proposition comes advertising and display," continued he. "Our advertising consists of the use of



Mirror and Red Hand Signal Outfit.

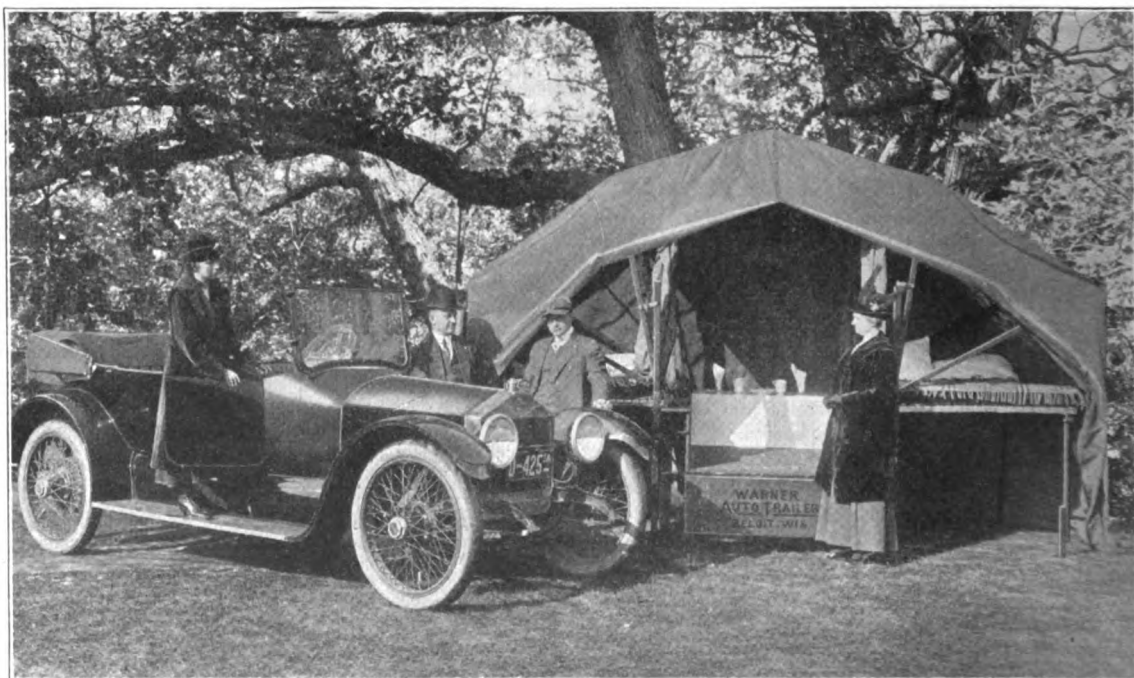
wear them. They sell from 50 cents up. One of the novelties of the season is a face shield, a combination face covering and goggle which protects the cheeks and nose and sometimes the entire face. It is an imported article and sells from \$3 to \$10.

### Buying and Selling.

Mr. Parmenter was asked regarding the buying side of the proposition and said: "We utilize all of the sources of supply. This is the rule of good merchandising and

both newspaper space and direct advertising through means of circulars, form letters, etc. Our newspaper copy has long been in a class by itself. Marshall Field & Co. were the first big Chicago retail store to ditch those fictions in advertising expressed in a \$15-price-marked-down-to-\$8.98. We talk quality and values and every statement in an ad is the truth."

One of the big points in the Field advertising is not so much to advertise



Warner Camping Outfit In Use. Equipment Folds Up and Carries in Trailer.



Interior of the Marshall Field Store—Motor Utilities Section.

the Field store as to advertise the fact that automobile accessories and auto car equipment of great variety can be found at this store. Here is a big suggestion for the garageman and auto dealer in every community. Do not neglect to advertise articles that are not associated intimately in the public mind with your business. The public should know that you have such articles for sale.

#### Special Brands Help.

One of the features of importance in the Marshall Field scheme of merchandising is special brands. They handle a special brand of lubricating oil—in fact, a full line of motor utilities, such as carbon removers, polishes, anti-freeze fluids, etc. While the small dealer cannot do this, the larger dealer in every community can and should, thus effectively supplementing the advertised brands. In this way you standardize products and put your own reputation and trade mark behind them. They are sold on faith in you and it is your highest privilege to justify that faith. No better advertising is possible.

The Field windows, which display automobile goods, are excellent. When space



Submarine Trunk.

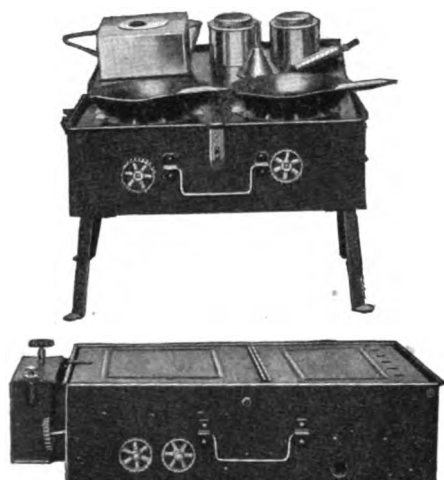
as valuable as the window space in the Field store is used to display auto supplies and accessories, no retailer in any of the smaller cities can afford not to put his window to work.

Mr. Parmenter states that a good delivery system makes a hit with the trade. When a customer orders anything for his car by telephone or messenger, it is delivered promptly. An efficient delivery system is becoming more and more important with the increase in number of women buyers. Every dealer and garageman should be in a position to meet the most exacting delivery requirements.

#### Profits the Great Desideratum.

This article would not be complete or perform its function if it left the question of profits untouched. The AMERICAN GARAGE AND AUTO DEALER has persistently urged garagemen and dealers to increase their stocks, broaden their lines, and get into the merchandise game in the most effective manner possible. The lines referred to in the foregoing are all long-profit lines as compared with short profit goods like tires, gasoline, etc. The range extends from 25 to 40 per cent gross, and this might be increased another 10 per cent through careful, expert and widely distributed cash buying. As the overhead of the

average well-to-do garageman and dealer is not over 11 per cent. The net profit is a handsome one. The goods turn quickly and often during the active season and,



Cooking Outfit.

as we so clearly proved in our last number, the dull season is rapidly disappearing through the expansion of winter trade.



Goggles.

This store covers one entire city block with sixteen floors, three of which are under ground, and then spills over into an additional block with a subway connection under the street. It is the largest retail store in the world.



Half Round Collapsible Buckets.

In closing, we want to repeat that garagemen and auto dealers who have not done so, should get into the merchandise

game at once. 1917 business is going to exceed all previous records. Put in a stock if you can; if not in position to do so, sell by catalog. There is a large trade tribu-



Tow Ropes.

tary to your place of business, so work it systematically. It will increase your prestige as well as your profits.

The spring season is a good one in which to inaugurate a mailing list campaign. Get a list of the people who can afford to buy a car, then commence a sys-

tematic letter-writing and personal call follow-up. Every really good prospect in your territory should be gotten after. Sell him on buying a car, then sell him on the car you handle. Get a list of car owners, then go after this class of trade on accessories, novelties, etc. Keep your place of business on the map in the minds of your community by continually calling their attention to what you are doing and why you are doing it.

Always sell goods and services at a profit—a net not a nit profit. Ascertain your overhead, then add it to the cost of your goods or service. Always figure cost of doing business on sales, not on purchase or producing cost.

**MARSHALL FIELD & COMPANY**  
ANNEX - THE STORE FOR MEN

Washington Street and Wabash Avenue

**Motor Utilities Exhibit**

A VISIT to the Motor Utilities Exhibit on the Fifth Floor of The Store for Men will prove both interesting and instructive. Several practical demonstrations have been arranged, each in charge of an expert who will explain the various processes. One can learn all about the construction of our perfected tire from the raw rubber state down to the finished shoe; or on another part of the floor can view the actual lubricating qualities of our Pennmotor Oil.

Other demonstrations include the Perry Auto Lock, which renders any car practically theft proof, the Wilmo Manifold, which makes possible a saving on gasoline of from 25% to 50%, the K. P. Rim Tool, the Submarine Tire Trunk, the Warner Auto Trailer—for touring—the Grus Spring Oilier, Celluloid Cleanser, and others.

The courtesy of the Packard Motor Car Company and of the Maxwell Motor Company has enabled us to exhibit their respective racing cars, which have occupied unique places in the racing world.

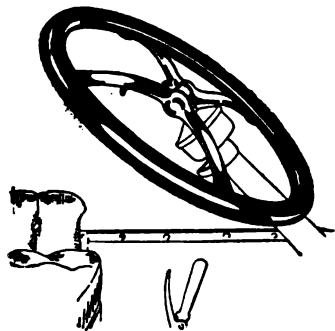
Visitors to the Motor Show are invited to view this exhibit and to make free use of the facilities of this Store and of the Main Store.

Connecting up store advertising with current events, used during Auto Show.

# Advertising, Merchandising and Your Spring Business

By PAUL G. HOBART  
Former Editor Stewart Lever

**D**EALERS, do you realize that much of the business you will do during coming Spring months depends largely on the stock of supplies you have on hand? While it is not essential that you have a large stock, it is good business to have a complete assortment. This assortment should include a stock of accessories,



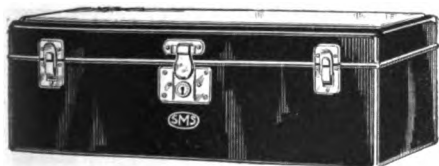
	Plain rim.	Corrugated.
Dealers' price.....	\$2.65	\$3.20
Retail price .....	4.25	5.25
Mail - order-to-consumer price .....	3.50	4.25

repair parts and supplies that will be in general demand by motorists when they put their cars in order for the coming season.

## Materials for Lighting and Ignition Systems.

For instance, mazda lamps, fuses, and parts connected with ignition and lighting systems will be in general demand. In connection with these items, new tail lights, sidelights, headlights and dimmer lenses, will attract attention and increase your sales. You should stock a large enough assortment of these materials to attract attention, and always try to keep samples so that possible sales will not be driven elsewhere.

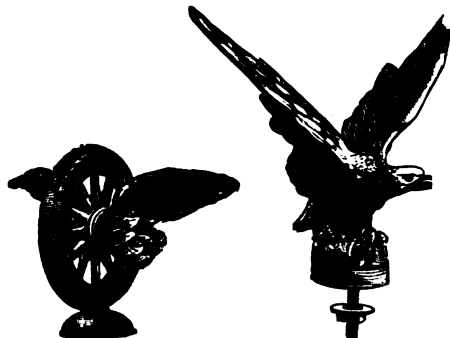
Repair parts form a big source of profit, especially to the dealer who has a repair shop connected with his place of business.



Dealers' price, \$0.98. Retail price, \$3.00.  
Mail-order-to-the-consumer price, \$1.45.

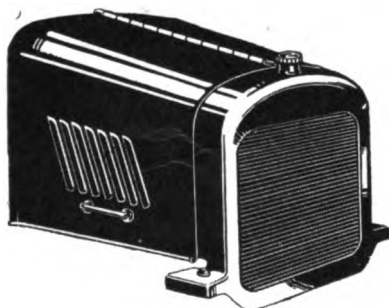
and often, even to you who conduct only an accessory and supply store. Ford parts are especially good sellers as many Ford owners repair their own cars. However, there is a multitude of repair materials

that every car owner needs and wants. You should be prepared to furnish these materials, as they are often big factors in keeping your customers.



Dealers' price, \$0.89. Regular retail price, \$1.75. Mail-order-to-the-consumer price, \$0.95.  
Dealers' price, \$0.79. Retail price, \$1.25. Mail - order-to-the-consumer price, \$0.87.

Another class of money-making auto accessories that many dealers do not realize on, are the motoring conveniences. Few dealers carry any stock of robes, thermos bottles, trunks, luggage carriers, lunch kits and hundreds of other articles of this nature. These sell and sell fast. Practically every owner of a car enjoys short trips over Sunday, or for a picnic, and mer-



Dealers' price, \$9.15. Retail price, \$15.  
Mail-order-to-the-consumer price, \$11.50.

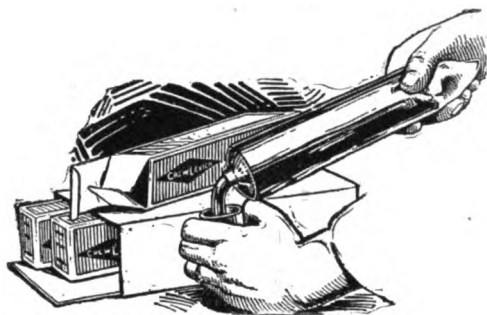
chandise of this sort is easily sold at a large margin of profit. There are a good many items of this nature illustrated on these pages with cost, retail and the mail-order-to-the-consumer prices. These will show you the unusual margin of profit possible on articles of this nature.

## Advertise Your Business to Make Your Profits Grow.

Advertising is particularly essential in selling supplies and accessories, and competitive prices have a remarkable effect on the buyers of auto supplies. The big department stores in the large cities depend on prices in their advertising to draw a

large proportion of their trade, and as the auto supply business is on a firm business basis now, dealers should use up-to-date business methods in exploiting their business.

Many dealers do not realize the necessity of joining advertising with merchandizing. Many more do not even know the meaning of advertising. They think of advertising as it appears in the national magazines, and overlook the fact that even a business card, with the notation of the

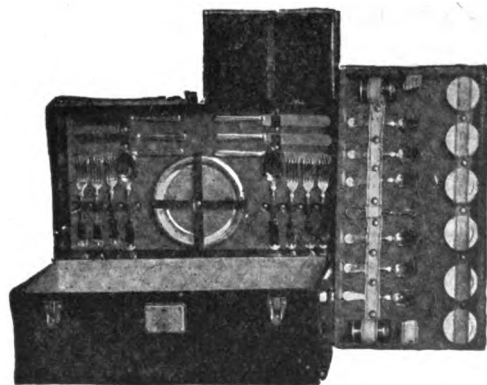


Dealers' price, \$0.70. Retail price, \$1.00.

business he is engaged in, is advertising. To sell goods, dealers must advertise. This does not mean that they must spend any great amount of money in advertising. A handbill announcing a new stock of auto accessories for spring; a small advertisement in the local paper; a window display or anything of this nature is advertising.

## Mail-Order-to-the-Consumer Competition.

Mail-order-to-the-consumer houses, with their usual lower prices are cutting into the business of many of the small town acces-



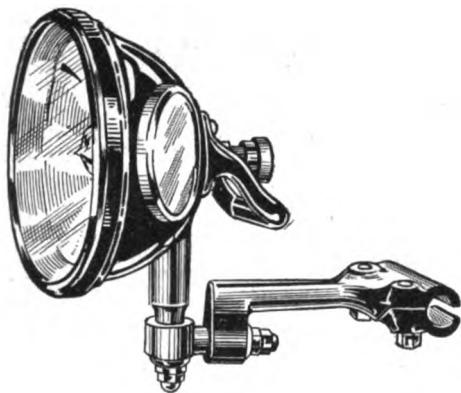
Dealers' price, \$10.75. Retail price, \$16.00. Mail-order-to-the-consumer price, \$13.75.

sory dealers. In order to meet this competition, the small town dealer has to offer competitive prices. To do this, he must buy at prices that will allow him a reasonable profit and at the same time offer a



price to his customers that will attract them away from the mail-order-to-the-consumer houses.

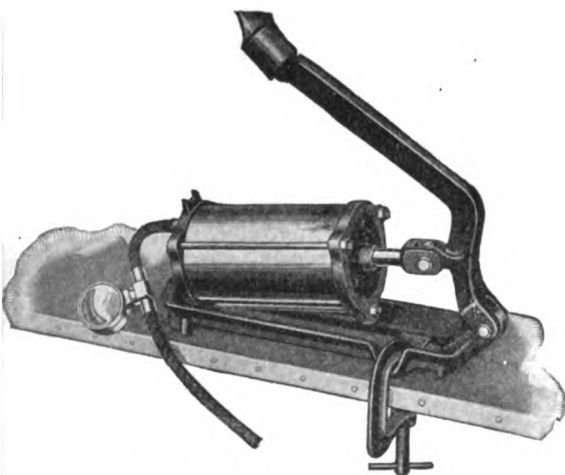
Every dealer knows that he can save a certain per cent by buying for cash. Many do not realize that the big automobile supply jobber does in some cases save a great deal of money by conducting a cash busi-



Dealers' price, \$2.55. Wholesale price, \$4.50.  
Mail-order-to-the-consumer price, \$3.50.

ness. A cash business, especially when the orders received run into thousands every day, enables the wholesaler to buy at much better prices, for as he buys for cash, he does not have to ask for long-time credit in order to purchase large quantities, but gets the lowest price. Naturally, he can then share his savings with the dealer, his customer, without detracting from his own profit.

As a consequence, many dealers, especially those in smaller towns and cities, are



Dealers' price, \$3.15. Regular retail price, \$5.50. Mail-order-to-the-consumer price, \$3.95.

buying at least a part of their supplies on this plan, and many are successfully meeting mail-order-to-the-consumer competition by means of its economies.

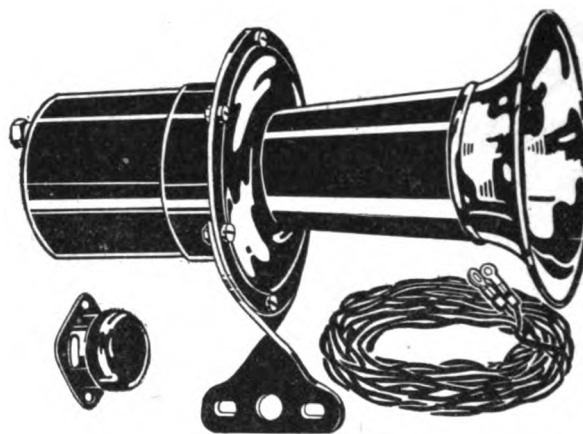
#### Merchandising and Advertising Build Up Sales If Combined Right.

Merchandising, the real idea of business, is only accomplished successfully by using every possible advertising means at hand. In plain words, display your goods. Your customers will buy what they can see. That

is the reason that many of them buy from catalogs. The goods are so attractively displayed, so interestingly described that the customer is convinced. The prices may not vary much, but the pictorial display influences him to place his order with the mail order house.

Don't you suppose that if you had the goods in stock, or more important still, if you had displayed them artistically, that he would have purchased the articles from you?

This brings selling of auto supplies down to points. The main point is merchandis-



Dealers' price, \$2.65. Retail price, \$6.00. Mail-order-to-the-consumer price, \$3.95.

ing—in your case the ability to sell once you get your customers' interest; the second point is advertising—getting your customers interested in your merchandising. And finally, your ability to successfully meet and beat competition, especially from the mail-order-to-the-consumer houses. If you will work along lines adapted from these ideas, the chances are 10 to 1 that you will succeed.

#### Illustrations.

The illustrations are furnished through the courtesy of the Service Motor Supply Co., of Chicago, and the prices listed are their prices to dealers, the usual retail prices, and the mail-order-to-the-consumer prices. On a buy-right and sell-right program of spring merchandise activity no garageman or dealer can fail to add to his volume of business and handsomely augment his profits.

#### Sure and Large Profits in Auto Clothing.

(See Illustrations second page beyond.)

In these days of strenuous competition, one is apt to overlook the splendid opportunity for sure and large profits, by not selling automobile clothing, and by automobile clothing, we mean dusters, suits, raincoats, sweaters and caps, and, by the way, they are used in a number of ways by motorists, horsemen, mechanics and dozens of others.

Clothing specialists in the marketing centers have a splendid line of these dust-

ers, ranging in price from \$12 per dozen up to \$48 per dozen, made in single-breasted style, as well as the smarter double-breasted fashion.

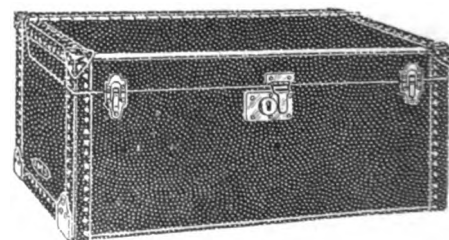
#### Dusters in New Shades.

These dusters come in the practical linen shade materials of various qualities, that do not show dust or even harbor dust, as well as in some of the more popular gaberdine materials that are showerproofed. They also show dusters made of dark gray, olive and other colors that will not show the dirt—very useful, indeed, for a mechanic, a shopman or for an automobilist

to carry in his toolbox for use when changing a tire or any other dusty, dirty job.

Then there are khaki, whipcord and corduroy suits for auto and motorcycle use. These suits, also, are sold extensively for use by surveyors, engineers and others.

But perhaps the item of biggest interest to the garage owner and dealer, is the item of raincoats. From the low-priced tan colored rubberized garment, up to the finest double-texture cloth face rubberized coat, the line is complete and satisfying.



Dealers' price, \$5.98. Retail price, \$12.00. Mail-order-to-the-consumer price, \$7.95. (Service M. S. Co.)

One of the manufacturers features a new material called styma cloth, which, for automobile use, is unsurpassed, for if soiled with grease or oil, the oil or grease can be washed off, leaving no trace whatever. Both the regular rubberized raincoats and the styma coats are made for men, women and children.

#### Sweater Coats Coming in Strong.

Makers also show some models of sweater coats especially designed for motor use,

# THE EARLY BIRD GETS THE WORM.



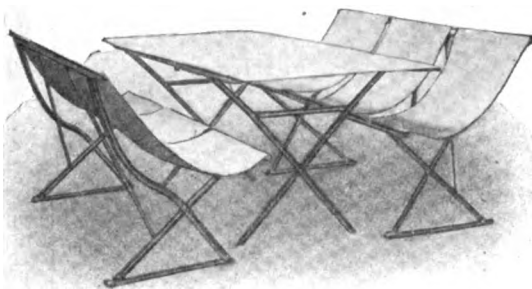
and we are especially impressed by the heavy weight sweater coats made with a big broad shawl collar to button up around the neck. We are also interested in sweater coats made without collars, for wear under a regular top coat or duster.

The assortment of colors in jersey sweaters for motorcycle use, especially

up-to-date garage owner or auto dealer in featuring a line of this kind.

Another item that interested us as we looked over makers' stocks, and which would undoubtedly prove acceptable to the motorist, was Mackinaw coats. At no season have we seen such an extensive and attractive assortment of patterns as in the

Bros. Co., Chicago, for the accompanying illustrations, prices, style and merchandise



**Canvas Table Set.**  
(Field's.)

those for clubs, showing single or double stripes through the chest with some contrasting color in the body and sleeves, are very attractive and mighty good sellers. Here is an opportunity for a garage owner to take up, without an investment of very much capital, and reap a quick harvest of profit in the coming summer and fall months.

Business is always good on such items, and no mistake will be made by the live,

1917 spring line, in styles that would sell readily by a dealer in automobile accessories.

## Caps of Nobby Shapes.

The line of caps made of pongee and other lightweight materials in all of the popular shades complete the line, and all of the foregoing articles carry a handsome profit for the dealer.

The AMERICAN GARAGE AND AUTO DEALER is indebted to Mr. Withers, of Kling



**Collapsible Shovel.**  
(Field's.)

suggestions largely predicated upon the present stock and selling campaign that firm now has under way.

## Conclusion.

And now, to the subscribers of AMERICAN GARAGE AND AUTO DEALER, may you use these and other suggestions to your advantage. May you get into line and stay in line for the business which, aside from war, is growing faster than any other.

It is a business to be depended on; one that is as certain to grow as the sun is to rise. No single way to get business is the only way; least of all the perfect way. Suggestions are for adoption after experimenting. Any good idea is certain to work somewhere. It may not work everywhere. But any good idea is worth trying. If it doesn't work well, try another. If it does work, stick to it like a brother. It will be as certain as death and taxes that tried and profitable methods of promoting business will continue to show a profit.



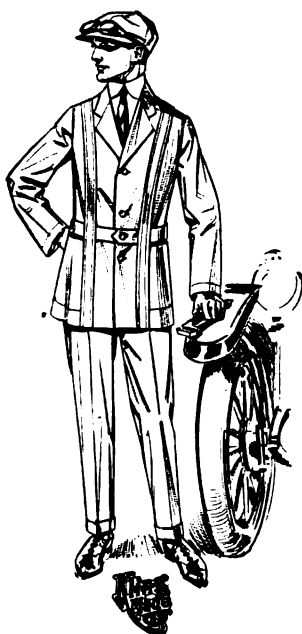
**Plain Style Mackinaw Coat.**  
\$3.75 to \$7.25 wholesale. \$5.50 to \$12.00 each retail.



**Norfolk Mackinaw Coat.**  
\$5.25 to \$7.75 each wholesale. \$8.00 to \$12.50 each retail.



**Double-Breasted Duster.**  
\$18.00 to \$42.00 per dozen wholesale. \$2.50 to \$6.00 each retail.



**Motorcycle Suit.**  
\$3.75 each wholesale. \$6.00 each retail.



**Regular Shoulder Rubberized Raincoat.**  
\$3.75 to \$12.50 each wholesale. \$5.50 to \$20.00 each retail.



**Jumbo Stitch Sweater Coats.**  
\$27.00 to \$72.00 per dozen wholesale. \$3.50 to \$9.00 each retail.

### Appreciation.

The Van Hoy-Goodwin Garage, Pittsburg, Kans., writes: "We think a great deal of the AMERICAN GARAGE AND AUTO DEALER."

J. D. Blocker, garageman and dealer, Ventura, Calif.: "We like AMERICAN GARAGE AND AUTO DEALER very much."

F. J. Wescott, garageman and repairer, Stuttgart, Kans.: "The AMERICAN GARAGE AND AUTO DEALER is the best trade magazine we have ever read."

Ogden Park Garage, Chicago, Ill.: "We

like AMERICAN GARAGE AND AUTO DEALER very much indeed.

R. C. Wise, auto dealer, Hill City, Kans.: "The AMERICAN GARAGE AND AUTO DEALER is simply fine."

Archie Hazen, repairer and supply dealer, Lincoln, Kans.: "I always read AMERICAN GARAGE AND AUTO DEALER with interest, especially the questions and answers."

G. J. Keenan, real estate man and auto dealer, was found dead in his private

garage at the rear of 318 South Kedzie avenue, Chicago, on March 20. It is believed he was asphyxiated by gas from the car.

The Albany, N. Y., Auto Dealers Association elected the following officers at its recent annual meeting: President, E. V. Stratton, E. V. Stratton Motors Co.; vice-president, Horace Rayno, Boulevard Garage Co.; secretary and treasurer, J. B. Wood. This association is doing good work.

# Stunts

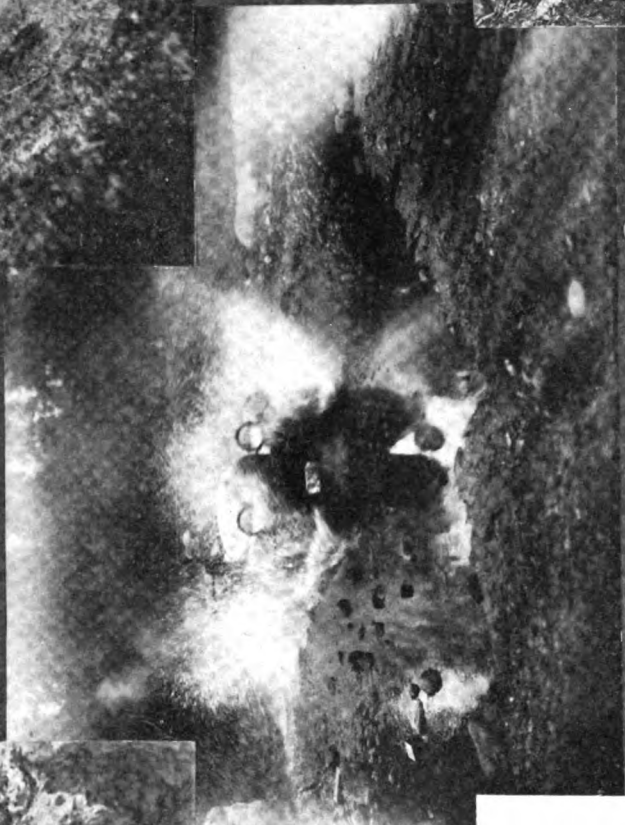


Climbing a 57  
Per Cent Grade

"Overland" in  
Straits Settlement

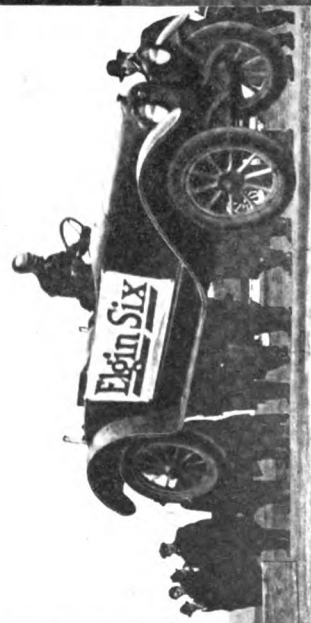
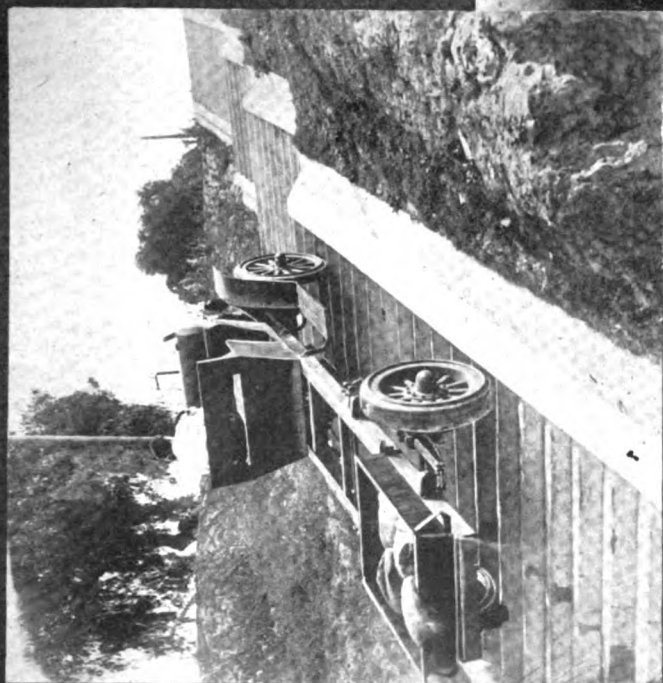


Splash!



Work of Russel  
Internal Gear Axle

After a 36 Foot Jump





### Peter P. Kostyal.

Peter P. Kostyal, 12 E. 57th St., Chicago, is a machinist with an old country education that ranks him as an expert.



Mr. Kostyal was born thirty-five years ago in a town we challenge our subscribers to pronounce from the spelling or to spell from the pronunciation. It is Mezokovachaza, in the county of Csanad, Hungary. He went through the public schools and then served a four years' apprenticeship as a machinist. On the completion of his apprenticeship he worked in several factories, while taking a night course in technology in the Hungarian King State Technological Trade Museum at Budapest. He passed his examinations on benzine, gas, gasoline and steam engines and direct and alternate electric motors.

This training gave him the position of chief engineer in the mill and agricultural alcohol factory in Szekelyandrasfalva and which is submitted as a very fair running mate to the name of his birthplace. He saved enough to permit of a course in chemistry in the Hungarian Agricultural Academy in Kassa, after which he worked some time as motor car machinist for various railroads.

Then came a jump to the United States and six years of work without the loss of a day for the Gulf, Colorado and Santa Fe R. R. Last September he began business for himself as proprietor of the Castle Garage and Machine Shop, 12 E. 57th St., joined the A. A. G. O. and is consequently doing well.

### Harvard Electrical Instruments.

The Harvard Electric Company, 525 West Van Buren street, Chicago, Ill., are manufacturers of ammeters, voltmeters and battery indicators, and have just issued a new catalog, No. 25, illustrating this material. Those interested are requested to write for a copy of this booklet.

### Illinois Garagemen, Attention!

Illinois garagemen and auto repairmen now have an opportunity to help put through a garage lien law that will protect our craft against the machinations of dishonest car owners.

H. E. Halbert, legislative chairman of Illinois, has been doing very effective work in drafting a measure which is now before the legislative. It is known as Senate Bill No. 197.

Write your legislators at once urging them to support this bill. Make the point good and strong that no honest car owner has anything to fear from this piece of legislation.

In writing your members mention the bill by number and see that every other garageman and auto repairer in your community does likewise.

Now is the time to act! Do not delay!! Get busy!!!

### Allen-Curtiss to Benton Harbor.

The Allen & Curtiss Co., formerly of Mishawaka, Ind., has removed to West Main street, Benton Harbor, Mich.

### Charles City, Ia., Auto Men Dine.

The auto dealers and garagemen of Floyd and Mitchell counties, Iowa, held a notable dinner and meeting in Charles City recently. Good business talks by B. F. Farrand, A. O. Repast, T. A. Bailey, N. M. Blanchard, C. W. Cremer and H. B. Twinning followed the repast.

Those present besides the speakers were: L. E. Reed, Ray Reynolds, Jack Gardner, Ben Chapman, C. E. Buckman, B. E. Boughton, Peter Retterath, Rob. Hollatz, Frank Meyers, E. G. Davis, A. M. Reazak, Wm. Koerner, A. H. Case, Ralph O'Harrow, C. T. Elliott, Homer Johnson, L. E. Harrison, A. T. Cates, G. E. Hildebrand.

### Milwaukee Dealers Elect Officers.

The Milwaukee Automobile Dealers, Inc., held its annual meeting February 8th and re-elected all of its old officers, which are: Anton J. March, Reo distributor, president; J. G. Wolleager, Studebaker and Peerless, vice-president; Herbert W. Bonnell, Mitchell, secretary; Jesse A. Smith, Hudson, treasurer. The business meeting was preceded by a banquet.

## Buick Cars Delivered Overland

### One Hundred and Thirty Wisconsin Dealers Go to Flint and Drive New Cars Back to Customers from Wisconsin

Seventy Buick dealers arrived in Chicago recently. They were on their way to Flint, Mich., and each has returned through Chicago driving a new Buick for a Wisconsin buyer. Here they are as they landed at the Northwestern depot in Chicago:

The first party was followed in a week by another party of sixty, making a total

of 130 Buicks driven overland from Flint to customers in Wisconsin. The car shortage was the primary cause of these two pilgrimages. Customers were so well satisfied, however, to have this preliminary test over winter roads that dealers in other makes of cars are lining up their customers for corresponding deliveries.



# Starting and Lighting Systems

**Electric Equipment that Every Auto Repairman Should Understand—Its History and Development—Vital Facts for Garageman to Consider If He Keep Abreast**

By A. O. WITTE,

Chief Engineer, American Bureau of Engineering

**EDITOR'S NOTE:** This paper was read at one of the sessions of the A. A. G. O. convention in Chicago Feb. 1 and 2, and expresses Mr. Witte's conception of the problem which confronts the garageman today in the work of handling repair jobs on electric lighting and starting systems. Every garage man and repair man should read this article carefully, and the others that are to follow.

**T**HE electric starting and lighting industry, which came into existence in 1912, has in the remarkably short space of five years grown so rapidly that it is now a huge giant, supported by millions of dollars of capital and governing the activities of thousands of men.

The first year of its existence did not give promise of a very bright future. Many car manufacturers thought that the addition of an electric starting motor and a generator would result in increasing the number of diseases from which the gasoline engine suffered, without offering any decided advantages to offset the increased cost price and the expense of keeping a car in working order.

## **First Designs Crude and Complicated.**

The objections of car manufacturers were justified to a certain extent because the installation of electric starters and generators called for new and very special designs to meet the conditions of service imposed upon them by the motor car. Some of the first designs were rather crude, complicated and cumbersome.

The service they gave, measured by the standards of today, was poor, yet in spite of these disadvantages the ease of starting the engine by merely turning a switch or stepping on a pedal, instead of cranking one's arm off, and the satisfaction of having a well-charged battery, and brilliant, dependable electric lamps which could be lighted by merely pressing a button, and without getting out of the car and wasting many matches and much time, appealed so strongly to the car owner that manufacturers were forced to install the convenient and time-saving electric starters and generators. Today fully 98 per cent of the various makes of cars are electrically equipped.

To supply the rapidly growing demand for electric motors and generators many

companies were formed. Some of them lived but a short time, others have grown to be great corporations. New companies are being formed from time to time. Of these newcomers, some will have a short life, others may survive. The industry is still far from being in a settled condition. It resembles a young giant who has grown so rapidly that, although he has great strength, yet some parts of his body have not been able to grow as rapidly as others, with the result that he is not a fully developed being.

Although the entire starting and lighting equipment of any motor car may be

## **Weakest Point in Industry.**

Thus the starting and lighting industry is one that may be considered from many viewpoints. Each manufacturer has his own special problems and interests. The present scheme of organization would be excellent if each part of a starting and lighting equipment gave perfect service and did not require occasional repairs. It is when things begin to go wrong and difficulties arise that we come to the weakest point in the industry today—i. e., service. It is the service end of the game with which the garageman is concerned. He is the one who is called upon for help when a car's lights go out, the battery runs down, or the starter will not crank the motor.

Equipment makers have shown but very little confidence in the average garageman, and many have adopted the policy of sealing the various parts of their products. Their position in this respect has been justified to a certain extent by the fact that the average repairman has not a sufficiently thorough knowledge of electricity and its application to starting and lighting systems to enable him to make satisfactory repairs and not ruin the delicate parts of the system.

The equipment maker has been forced to seal his apparatus, establish service stations at convenient points and maintain a staff of traveling service men to instruct the service station men in their particular make of equipment. Such a service system has been established at a great expense to the equipment makers, but they have been compelled to build it up for their own protection.

## **Service Stations and Factory Branches Not Profitable.**

Factory branches are not very profitable from the viewpoint of the manufacturer, in that the cost of maintaining them and the necessary investment, together with the extra amount of gratis work which they must do because they are factory branches, cut down the amount of profit to a great extent, and most manufacturers would prefer not to have such branches if the service given by their products could by other means be kept up to a high standard. In spite of this fact, there



Mr. Witte.

packed in a small box, still the design, manufacture and maintenance of the various parts have presented entirely different problems, and have resulted in the formation of companies who devote their energies to the manufacturing of the various parts of the equipment. We have, therefore, companies manufacturing the generators and motors, others that build the batteries, some that build only regulating devices, while still others make dash switches, meters, fuses, or lamps, and so on.

has been a very decided increase in the number of service stations which are factory branches in the past two years. In addition to increasing the number of service stations, the manufacturers have also increased the number of restrictions placed upon the possible repair jobs that the garageman may make.

The increase in the number of service stations established by the Gray & Davis Co. in three years may be taken as an example. In 1913 Gray & Davis had eighteen stations. In 1914 they had established sixty-one, and in 1915 there were seventy-six. That is the growth of only one company. Other companies have increased the number of their service stations in a similar way.

In 1916 eight manufacturers, equipping 108 makes of cars, which include about 80 per cent of the total number of American-made cars on the market, had established about 420 service stations. Why have these companies been increasing the number of their service stations, and why have they increased the number of parts which are not to be worked on by any repairman outside of their service stations? Because the repair work has been done by men who are not sufficiently familiar with electrical repairs to give good service to the car owner, and whose work has not given the equipment a fair opportunity to give the satisfaction which is obtained when repairs are made as they should be.

The result has been that manufacturers have resorted to sealing parts of their equipments, which eliminate work being done by other than authorized agents. If unauthorized agents break these seals, the manufacturer's warranty is withdrawn.

#### **Good Repair Work Will Abolish Such Statements.**

Here are a few samples of the kinds of statements that are made by the equipment makers in the instruction books issued by them:

"The warranty on the generator, starting switch and starting motor ceases if repairs are made or attempted by unauthorized parties."

"Do not attempt to adjust any of the minor parts of the motor generator. If the motor generator should become damaged, return it at once to our factory for repairs, where it will receive prompt and suitable attention."

"The automatic switch has no adjustment; do not temper with it. It will perform its functions perfectly if left entirely alone."

All the new Westinghouse outfits carry a cutout and regulator having a wire seal. Wagner generators have been adjustable since the beginning, but have lately been sealed. Allis-Chalmers, Disco and Simms-Huff tell the same story.

In 1913 a repairman was allowed to make repairs on 89 per cent of the different makes of starting and lighting equipments on 11 per cent he could not.

In 1914 he could work on 88 per cent, in 1915 47 per cent, in 1916 32 per cent. Thus in 1913 only 11 per cent of starting and lighting equipments had sealed parts, while in 1916 68 per cent were sealed.

What do these figures indicate? They mean that a repair business which might be a source of considerable profit is gradually being taken away from the garagemen. The makers of equipment, as well as the car manufacturer, are extremely anxious to give the motoring public the best of service. They must feel, however, that the average garageman is not capable of making satisfactory repairs on their equipments. Such service can therefore be obtained only at the official service stations of the various manufacturers.

If such stations were located in every town the system would work no hardship upon the car owner. As a matter of fact, however, there are about 500 service stations and 30,000 garages in the United States. That means that at only one out of every sixty garages is the car owner able to secure complete service, and then only for that part of the equipment of his car on which the service station is authorized to make repairs. Hence the need of the garagemen being equipped to do this class of work satisfactorily if the car owner is to be properly served and if the garageman is to retain business that rightfully belongs to him.

(To be continued.)

#### **Charleston Show.**

The Charleston Automobile Show, Charleston, S. C., the first in this

city's history, was held February 26 to March 3, under the joint auspices of the Charleston Advertising Club, the local automobile dealers and the highways and bridges committee of the Chamber of Commerce. This show was complete in every detail, the principal makes of cars were represented by their latest models and there were many special features of interest.

The Charleston show was held in a tent on Marion Square, the handsome park and drill grounds of the Citadel, which is in the center of the city. The tent, which contained 12,500 feet of exhibition space, was decorated uniformly throughout under the supervision of experts.

#### **Men Wanted.**

There never was a time in the history of the world when high-grade men were comparatively so scarce. There isn't a large business or manufacturing establishment but has vacancies for men who can make good in responsible positions. Possible candidates have been gone over with a fine-tooth comb; wherever there was promise of achievement the chosen ones were put to work, but the demand still is insistent.

The natural supply of good men is so inadequate that nearly every big institution has established a school of training, where promising material is drilled in the hope that it will turn out the finished product. The close of the war will release many capable men, but in the meantime there never was the present chance for the ambitious to forge ahead.

## **How to Make the Shop Pay**

### **Introduction to a Series of Articles by E. B. Hinrichsen, Mechanical Editor of This Journal—Expert and Results-Getting Information**

The shop has always been the thorn in the side of the average garage owner. Sometimes it breaks even, sometimes it pays a little, but more often it has to be partially maintained by the other departments and is generally considered a necessary evil. So much so, in fact, that many garage owners have turned their repair departments over to their former employees rent free and allowed them to have what profits there were rather than try to make them pay.

This is, as a rule, a most unsatisfactory arrangement. The men in the shop find that they make no more than their former wages, the garage owner finds that he cannot always keep his repair and service promises, the whole thing runs on a credit basis and the car owner suffers until he goes somewhere else.

The shop properly managed can be made to pay, and pay well, but not by the methods usually employed.

The manager of a prosperous garage business in the Middle West was complaining bitterly of this condition one day and, after a rather heated argument, entered into an agreement with an efficiency man to the effect that the efficiency man was to study the situation and introduce such reforms as he might see fit. His remuneration was based on the saving he would accomplish and, as the garage manager remarked, the shop had everything to gain and nothing to lose, as he could not see how it could be made any worse than it was.

It is my intention to tell in this series of articles just what was found, what remedies were applied, and to follow the enterprise through in detail.

No doubt conditions were worse in this case than would generally be found, but some of the changes that were made may give other garage managers an idea as to where their leaks are.

(To Be Continued.)

# Live Wires in the Garage and Dealer Field

A. J. CLEVELAND, Hudson, Velie, Grant and Smith Form-a-Truck Dealer, SALINA, KANS.

CAR sales jumped from 1 car the first year to 460 cars last year with the subject of this sketch in his business career from 1903 to 1916, and the 1917 record is expected to reach 900 cars.

Mr. Cleveland is located in Salina, Kans., with salesroom and shop at 208-210 N. Santa Fe street. He sold cars from the start and improved his record each year.

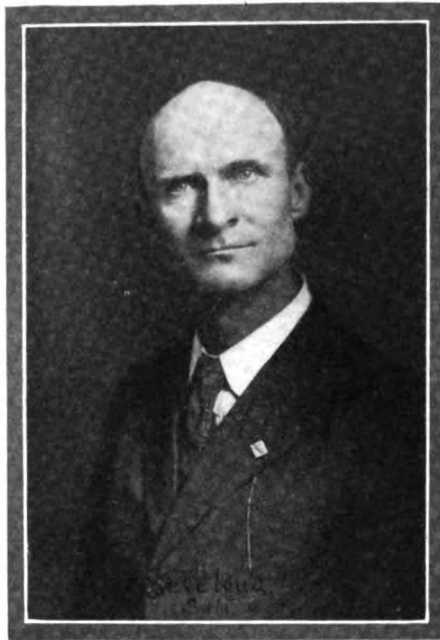
"The commercial car business is the big thing," said Mr. Cleveland. "Last year I sold 160 trucks and 300 pleasure cars. This year I have set my mark at 500 trucks and 400 pleasure cars—and I will reach it or do even better."

Mr. Cleveland is a practical mechanic as well as a salesman and business man. "I am a machinist by trade and was operating a machine shop when the auto hit the trail out this way—then I got into the game," said he. "I always was a lover of fine machinery and the mechanism of the auto and its various equipment is truly in that class."

Our Salina friend shatters the conception that a machinist and machinery enthusiast can't be a salesman and all-round business man. Mr. Cleveland's sales record proves the contrary—and in passing, we want to say that what he can do in a town of 10,000 population other "live ones" can do in similar sized towns, and in smaller towns

proportionate results are at least reasonably obtainable.

Mr. Cleveland in company with Harry A. Brownlee conduct business under the name of the Salina



Automobile Co. They have recently added to their pleasure car and truck line a Smith Form-a-Truck agency. "It is surprising the amount of people who need a truck unit for a pleasure car and how readily they buy after it has been demonstrated to them as a money-saver. This class of goods is the

biggest money's worth we have ever been able to give a customer."

In connection with their shop and salesroom a well-equipped garage is operated and "greater attention than ever," said Mr. Cleveland, "is going to be given to it."

There is one note of protest in Bro. Cleveland's communication. He does not mince matters when he says: "I have little use for the manufacturers and their brutal methods of doing business." Indeed, something must be radically wrong to wring from a successful, high-minded man like Mr. Cleveland such a complaint, and our manufacturing friends, we know, are as eager to correct the wrong as Mr. Cleveland and the retail branch of the trade are glad to have them do so. The relations between manufacturers and dealers should be equitable to insure the best results to both.

This leads up to Mr. Cleveland's last statement: "The only way we can better the situation in our business is by organization." As one of the organizers of the Kansas State Auto Trade Association and one of its first directors, also as one of the early boosters in the Sunflower state for the A. A. G. O., Mr. Cleveland has transmuted his statement into action. "Organization, conferences, adjustments"—these three words spell out a program that will put added dollars into the pockets of members of all branches of the auto industry.

## Chicago Auto Trade Association Annual Meeting and Banquet.

The annual meeting and banquet of the Chicago Automobile Trade Association took place Monday evening, March 12, at the Bismarck Garden. Twelve hundred banqueters were present and, under the inspiring leadership and gentle control of toastmasters E. G. Westlake and Harry Newman, rendered a program of exceptional value, interspersed with vaudeville numbers by the Bismarck Garden company of players. Among the speakers were A. J. Pettit, former judge; A. M. Eastland, presi-

dent Chicago Automobile Club; David P. Reid, president Speedway Park; H. M. Allison, former president; and Henry Paulman, one of the founders of the association. The old officers for the most part were re-elected for another year and include the following:

President—Joseph F. Davis.  
Vice-President—C. R. Dashiell.  
Secretary—Wm. G. Tennant.  
Treasurer—Henry Paulman.

Directors—one year, H. M. Allison; two years, W. J. Boone; two years, H. S. Gardner; one year, J. W. Magulre; one year, B. C. Buxton.

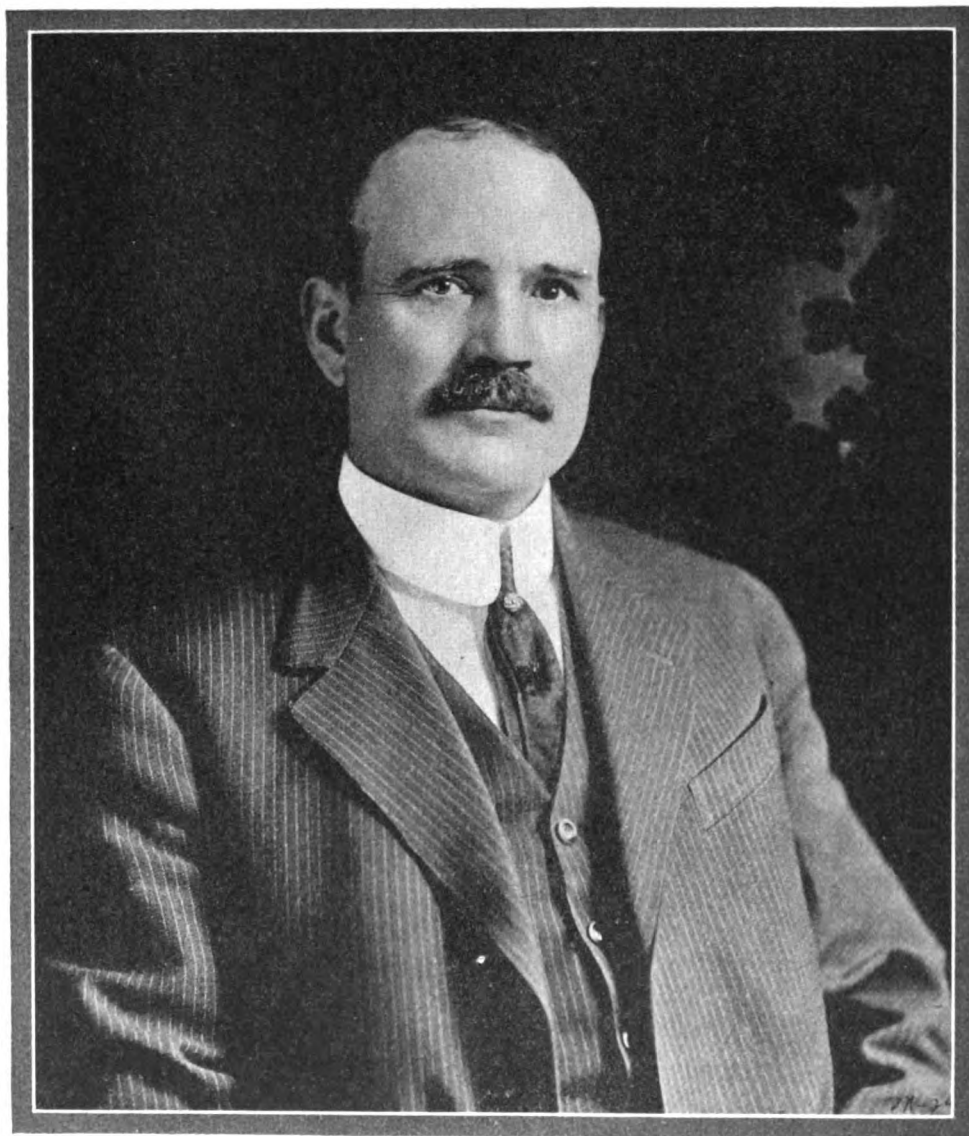
## Used Car Show in Chicago.

A used car automobile show will be held in the Coliseum on May 5 to 13 under the auspices of the Chicago Automobile Trade Association. Every effort will be made to make this show one of the most unique and interesting exhibitions of cars ever held. No new cars will be allowed on the floor, as the exhibition will be confined strictly to used cars, thus aiding in the splendid movement now under way to standardize and make permanent and profitable the used car business.





## Men Who Made the Auto Industry



CHAS. W. NASH

**C**HAS. W. NASH is president of The Nash Motors Company, and is regarded as one of the greatest powers in the motor car industry. As president of the General Motors Company, directing thousands of men and handling many millions of capital, he gained wide recognition, as that company showed a profit last year of over \$28,000,000. He then organized the Nash Motors Company and purchased the business and mammoth plant of the Jeffery Company, adding to its line of pleasure cars a complete line of commercial vehicles. The marked ability of Mr. Nash as a manufacturer, merchandiser and organizer was first shown in his career with the Durant Dort Carriage Company, where he worked his way up step by step to the position of vice-president and general manager in complete charge of the manufacturing and selling. His first connection with the automobile industry was with the Buick Motor Company, which he took charge of when it was losing money and shortly converted it into one of the most successful manufacturing plants in the world. The present Nash organization and prospects approximate in conception and probable execution the pinnacle of motor industry achievement.

# \$10 Charge Slip Important as Cash

**Should Be As Carefully Looked After  
As a \$10 Bill—Loss of a Charge Equiv-  
alent to Loss of That Much Cash  
—Now the Time to Reform**

By DONALD R. DONLEY  
Banker and Accountant

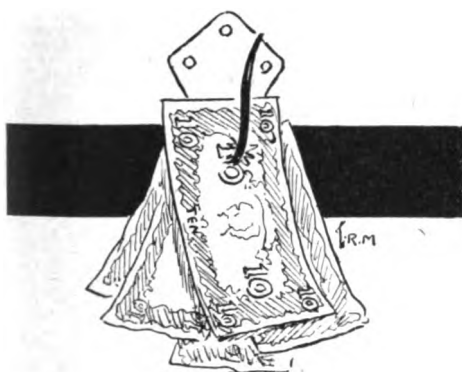
ONE of the cleverest little business sermons that I have seen for some time consists of two pictures.

One picture shows a bill hook on which hangs a lot of five and ten dollar bills, with the wording under it:

*"You wouldn't take care of your money in this way."*

The other picture shows a similar bill hook hung full of charge and C. O. D. bills. Under it is the legend:

*"Why do you keep your valuable charge records like this?"*



The more you think of these pictures the more you recognize the truth of the sermon preached.

Inventive genius has provided modern means for safeguarding a merchant's coin and currency, even to the point of recording each transaction of each clerk who has access to the cash register.

But, until now, the still larger leaks that come from carelessness in handling charge accounts have not been adequately provided against.

A charge slip for ten dollars against a customer is worth ten dollars, because, if the evidence of indebtedness is lost, the chances are that the money will be lost.

Yet merchants and small manufacturers who sell on credit are woefully careless with their charge business.

## The Difference.

Why is it that, of two merchants with apparently equal prospects of success and equally equipped with brains and business experience, one builds up a good business and makes money while the other, after struggling along for months or maybe years, fails?

My experience as a banker supplies the

answer, that in almost every case where an honest, experienced, industrious merchant fails it is because he robs himself of his profits through lax methods of handling his charge accounts. Indeed, it is almost axiomatic that any merchant, to prosper, must be careful with his credit business.

In making commercial loans the first questions I ask an applicant for a loan concern his charge accounts. If he can answer me at once, I know that he is in close touch with his business, deserves consideration and is entitled to a hearing as he at least knows what he is talking about.

If he shows ignorance of the details of this vital part of his business, his application is politely refused.

The merchant who is satisfied with approximate totals—his own, or his book-keeper's—is a poor risk and invariably on checking up a failure the receivers find the great majority of such credit accounts to be worthless.

## A Typical Case

I remember one case of a merchant in a Western town who was reputed wealthy but who suddenly failed, and when the receivers went through his books they found \$85,000 of worthless accounts which the merchant had been carrying as good and collectable.

These losses had two principal causes: credit risks that were bad from the start, and risks that may have been good originally but were allowed to lie so long that they became uncollectable for various reasons.

How much more that merchant lost by forgetting to charge altogether, nobody will ever know.

And no one will ever arrive at even an approximate estimate of what it cost him to keep his charge slips on spindles on an open desk, where they could be tampered with or destroyed either by debtor customers or tempted clerks.

## A Remedy Is at Hand.

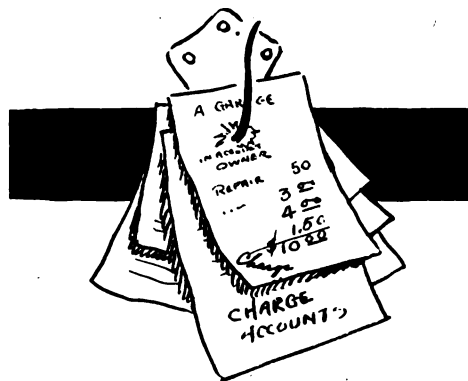
Now a new credit file that I have just seen will put a stop to all three of these serious forms of leaks.

It really takes the place of both a day book and ledger, and the only "posting" that is done is the writing of the charge slip, of which the customer gets the carbon copy, and the filing of the original copy in this unique device.

The file is divided into two compartments, an open one in front, and, back of that, a locked compartment with a plate glass top.

The act of pulling forward the vertical guides in the front compartment does three things:

1. It rings a bell.
2. It registers a serial number.
3. It opens the corresponding guides in the locked file so that the clerk can look through the glass top and see the previous charge slip of the customer, which is filed in such a way



*that the name and the total amount of indebtedness are exposed.*

The clerk files the original sales slip under the customer's name in the front or day-book compartment, and each night the proprietor or his delegated authority unlocks the glass covered rear compartment and transfers the daily charges to the proper locations in the permanent, or "ledger" file.

## Does Many Useful Things.

The information locked under glass serves two purposes: First, a private mark, made by the proprietor or credit man, may tell the clerk that no further credit should be extended to that customer without his personal O. K.

Second, the clerk enters on the customer's bill the amount carried forward plus the amount of the customer's current purchase, the customer being handed the duplicate sales slip embodying this information.

It may be said, in passing, that this act of reminding the customer of his full indebtedness each time he makes a purchase (Continued on page 44.)

# Mechanical and Engineering Problems

*THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and now consulting engineer with the Western Electric Co. When shop information is desired, write Mr. Hinrichsen, care this office.*

## THE WHY OF DIM LIGHTS.

**Question.**—Will you kindly tell me through the AUTO DEALER the cause of my lights going dim at a rate of speed above 26 miles per hour and when I press the horn button? I have Wagner generator and the battery is in good condition. Also tell me how to find a cross circuit and what causes a cross circuit.

G. S., Union Hill, N. J.

**Answer.**—I am just a little uncertain as to whether you mean that the lights become dim when the car speed is over 26 miles per hour and the horn is blown, or whether the lights become dim when the horn is blown regardless of the speed, and the lights are all right up to 26 miles per hour without taking the horn into consideration. I assume, however, that the latter is the case.

In the first place, are you absolutely sure that the battery is in good condition? Do the lights burn well at slow speeds and when there is no current going from the generator to the battery? The clutch in the generator might be in such condition that it would let go at 26 miles per hour and no current would come from the generator, but if the battery is in good condition, the lights should not dim. It is possible, of course, that when a certain amount of vibration is set up that a partial cross or ground occurs which would cause this. This would probably be due to worn or faulty insulation in the wiring, and this brings us to your question as to a cross circuit.

A cross or ground is caused by one or more electrical conductors coming in contact with others or with some common return for electrical current, usually called a ground, in this case the frame of the car or any metal part connected with the frame. This is usually caused by worn insulation of wiring either where two or more wires are run together or come in contact with some metal part of the car.

The ammeter will tell when such a leakage exists by showing too great a rate of discharge when the motor is idle or too small a rate of charge when the motor is running.

The horn is evidently drawing too much current for its operation for very much the same reason.

See that the battery is really in good shape. Have it charged if necessary and go over the wiring of the entire system

carefully including the horn. Make the tests with a fully charged battery and I think you will see a difference. One other point to be looked into is the circuit breaker. You will find data on this in the December number of the AMERICAN GARAGE AND AUTO DEALER.

\* \* \*

## A LIGHTING AND CHARGING BATTERY.

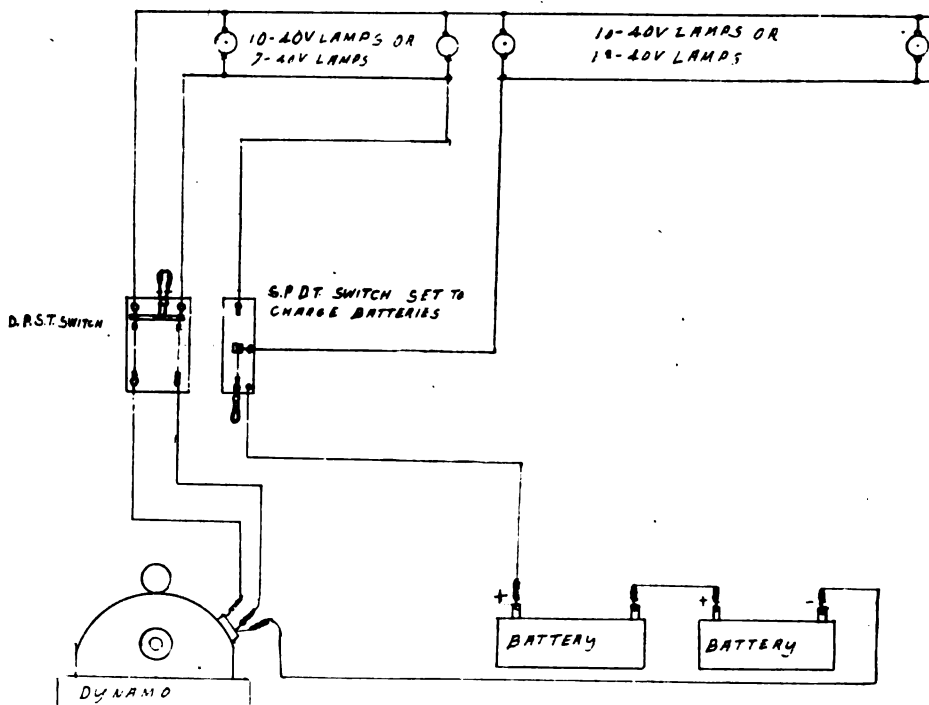
**Question.**—We would like to have your opinion on a little matter as follows:

We have installed a small generator for lighting our shop. It is a 40 volt, 20 light machine.

We want to know if we could arrange to charge batteries with this outfit without affecting the 20 lights. This is the

These figures are based on an output of 40 volts at the dynamo. You mention that you are using 30 volt lamps which I cannot understand. If it is a 40 volt machine and you only get 30, you probably are not up to speed. The R. P. M. should be stamped on the name plate and it would be well to test the speed and if it is too low, speed it up to the required R. P. M.

The drawing shows the switch set to charge batteries. If no batteries are being charged and the lights wanted, the switch should be thrown to the other side and the circuit will be just the same as at present. With this arrangement, you can get all your lights and also charge. You may have to vary the lights one or two from the figures given above, but I think you will



full capacity of the machine and we have to use all of the lights. We want to know whether we could charge storage batteries with it and still have the 20 lights burning at the same time. We use 25 watt, 30 volt, 16 C. P. lamps.

Please let us know how many batteries could be handled at one time and what extra equipment would be necessary.

We could do without 10 of the lights and use this current for battery work.

T. C., Texas.

**Answer.**—The accompanying circuit sketch will give you an idea as to how to wire for battery charging. Use 10 lamps in the regular circuit and 10 on the charging side for a six ampere charging rate. Use 7 lamps on the regular circuit and 13 on the charging side for an 8 ampere charging rate.

find them very nearly correct and a little experimenting will soon show you just the right proportion.

I would suggest you place an ammeter in the circuit between the single pole double throw switch and the battery and cut lights in and out on both sides until you get the exact current required.

To determine the positive and negative wires, after you are wired up, place the ends of the two leads to be connected to batteries in a jar of water. The wire that gases more freely is the positive one and should be plainly marked and always connected to the positive pole of the battery in charging.

As soon as you notice the first dimness in the lights you will know that you have reached the limit.

**ANOTHER WIRING PROBLEM.**

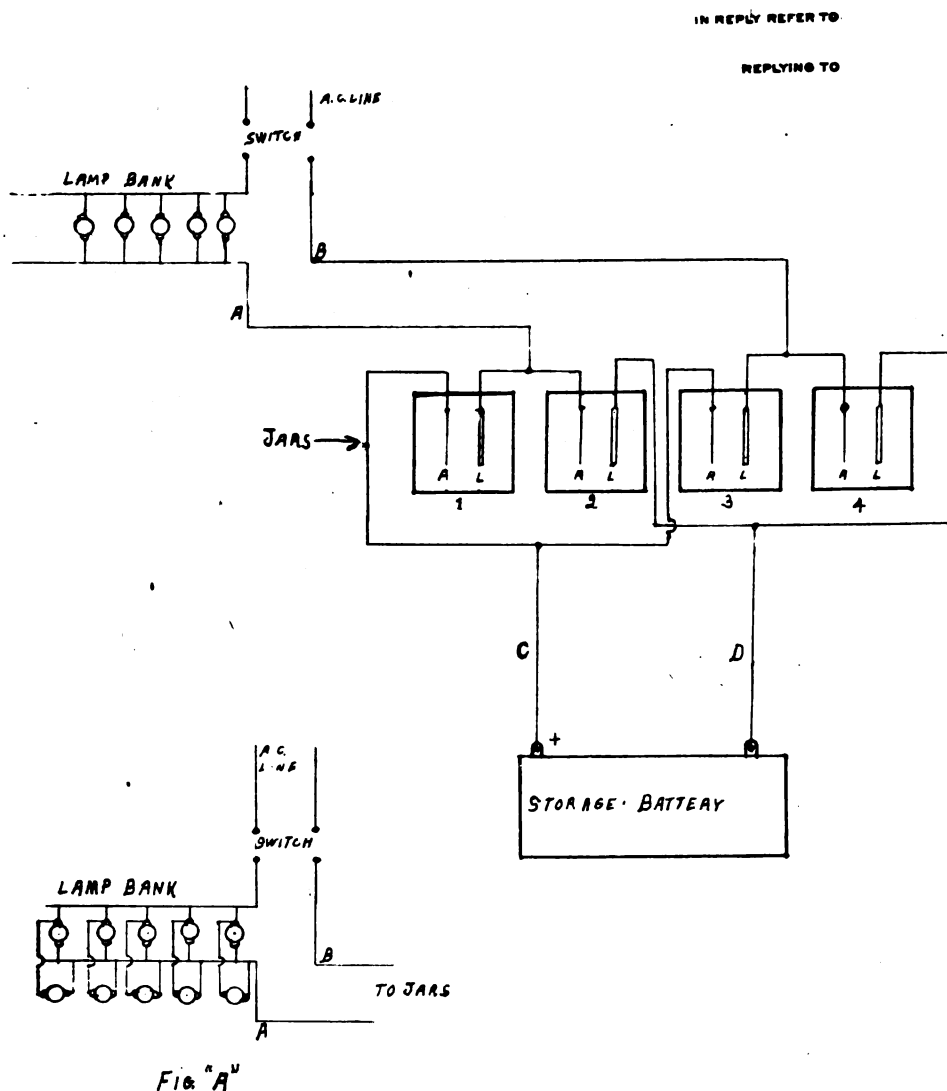
**Question.**—I wrote your department some months ago and for some reason I received no answer, so I thought I would dig the required information out myself by experiment. I have a few questions to ask that I was not able to solve by myself.

I made a rectifier for converting A. C. current into D. C. I used four old Exide battery jars and in them placed four aluminum plates and four lead plates—two plates to each jar. I filled the jars with a saturated solution of phosphate of ammonia, keeping the plates separated by using small blocks of wood. I took the current from a 110 volt A. C. line using a lamp bank of five 110 volt 32 C. P. carbon lamps.

According to tables and formulas this ar-

would flow through jar No. 1, through the battery and jar No. 4 to line B. With line B positive, it would flow through jar No. 3, through the storage battery and jar No. 2 to line A.

My first trouble was this. Without the wires C and D connected to anything at all, the lamp bank would burn when the switch was closed. This made me think that current was passing through the jars. When testing the wires C and D with the switch closed, D seemed to be negative and C positive (tested by immersing in water). Connecting C and D to an ammeter, it showed hardly two and one-half amperes where it should show 5 amperes. When hooked to an eight volt voltmeter, the hand bumped against the stop showing an excessive voltage.



angement should pass about 5 amperes. I made the connections as shown in the sketch.

I figured that this solution in the presence of an electric current would cause a sulphation on the aluminum plates that would allow the current to flow only from the lead plate to the aluminum plate. The path would then be as follows:

With the wire A positive, the current

These conditions do not seem right and I ask that you tell me where the trouble is if I have given you enough information. Have I wired it correctly? Any suggestions will be appreciated.

I have seen some wiring diagrams that are radically different from mine, but from my deductions, they use only one-half the current.

If you suggest changing the wiring,

please give a sketch and trace the current.

R. & C., Illinois.

**Answer.**—I am sorry your former letter was not answered. It must have been lost in transit as it is our policy to reply to every letter received.

Since receiving your letter we have tested several circuits of this kind and find that, except for a few minor details, you have worked out the best design for a rectifier of this type that we have seen or been able to construct.

The fact is, that you were so close to success, that only a minor point was not covered. When we first set your circuit up, we encountered the same difficulty that you had, but found that the lamp bank burning was caused by the partial circuit through the solution in the jars which continued until the aluminum plate was "formed" or, in other words thoroughly oxidized. The time required for this varied from half an hour to one and one-half hours depending upon conditions. We also found that a saturated solution is too heavy and the best results were obtained from a 10 per cent solution.

After about half an hour's work under load, the jars, or rather the solution, reached a temperature of about 98 degrees F. and the whole system was disorganized. By circulating water around the outside of the jars, and watching the temperature carefully, exact data was obtained as to temperature efficiency and found to be between 70 and 75 degrees F.

You do not state how far apart you blocked your plates, but we tried various distances and found that for 110 volts blocks from  $\frac{1}{4}$  inch to  $\frac{5}{16}$  inch worked best.

Figure "A" on the sketch shows the lamp bank we used to obtain 7 amperes, but of course, that often depends upon local conditions. It is a simple matter to cut out or in lamps until the desired result is obtained.

In regard to the apparent high voltage across the lines C and D, this will always be encountered without a rheostat across the line to balance it. The storage battery takes the place of a rheostat and you should get a correct reading for voltage with the battery in the circuit.

Your tracing of the current flow is correct.

I think you will find that if you reduce your solution, give the plates time to oxidize, arrange to cool the jars to the proper temperature, experiment with various lamp combinations and make your tests with the battery across the line you will have no more trouble.

Of course, these outfits are very low in efficiency. The best we could get was about 28 per cent, and it would be interesting to know just how long one would take to use up the price of a rotary converter or motor-dynamo set in wasted current.



## Practical Vulcanizing Hints

By D. R. CAIN,  
Instructor, Goodyear School of Tire Repairing.

### FOR SMALL TUBE PUNCTURES.

Many repairmen in repairing a "pinhole" puncture use a patch several times larger than the injury. This requires very heavy pressure to obtain a smooth surface.

There is a much better way. Trim the hole just enough to remove all ragged edges, but enlarge it as little as possible. Clean thoroughly and cement. When the cement has dried, force a small thread of gum through the hole with an awl, trimming flush on the outside. In curing use just enough pressure to hold the tube firmly on the tube plate. A piece of holland or tracing cloth laid on the plate will ensure a smooth surface.

\* \* \*

### MAKING AIR BAGS LAST.

The life of an air bag can be greatly lengthened by observing the following rules, which have been found valuable in the Goodyear repair school.

When the tire is placed in the mold the clamp screw should be tightened until the exact size of the tire is obtained, and then given about one-half turn. This slightly decreases the size of the cavity and relieves the strain on the air bag, in addition to giving perfect results in the cure.

Never allow the bag to become flat, as this will cause cracks in the lining.

Inject a little water into the bag each week in order to keep the inside of the bag moist.

Don't pull the bag out by the tube. Use  
etc.

By observing these precautions air bags have been used for as many as 145 cures.

\* \* \*

### RETREADS IN SECTIONAL MOLDS.

Here is a method that will give very satisfactory results:

Cure each section one-half the regular time. After completing this operation again place the tire in the mold, lapping just half-way between the points made on the first round, and cure for the remainder of the period. In this way no portion of the tread will be overcured.

\* \* \*

### LAP PLIES IN SECTIONAL WORK.

It is not advisable to butt the plies of fabric in building a section, for they will draw apart in curing, due to the expansion and the flow of the gum. To make allowance for this action, lap the new ply about one-eighth inch over the old fabric.

\* \* \*

### IN THE WINTER TIME.

Repair gums and fabrics received in cold weather sometimes appear lifeless, when as a matter of fact they are merely frozen. The freezing does no harm, but it is a good plan to thaw out the repair stocks in a warm room before using.

## Welding Information

### WELD ON STEEL SHEET METAL.

**Question.**—How can I weld sheet steel without getting the overlapping ripples caused by a circular movement of the torch?  
A. B. C., Nebraska.

**Answer.**—By moving the torch along steadily parallel with the weld you can make a reasonably smooth job. However, it will have the strength given the weld when a circular movement of the torch is used. You should weld in the manner you are now doing and then go over it a second time for the purpose of running it out smooth.

\* \* \*

### SAVING FILLER ROD SCRAPS.

**Question.**—Is there any one who makes a specialty of recasting the small ends of filler rods, etc.? We have difficulty in using such ends up, especially aluminum.  
N. R. Co., Ohio.

**Answer.**—The best solution to your problem is to use up the small ends every day and not allow them to accumulate, according to an acetylene journal expert. As soon as you take a new rod, weld the remaining part of the old rod to it. If you follow this policy you will save quite a bit on your rods. Some shops recast the aluminum and brass rods. The small pieces 10 or 15 pounds are melted in a small crucible and poured in molds, the simplest mold being made by a piece of angle iron about 10 or 15 feet long. In reclaiming the aluminum rods they may be lapped over each other about 1/2 inch and then puddled together.

\* \* \*

### AUTOMOBILE ENGINE PREHEATING DIFFICULTIES.

**Question.**—We have had difficulty in getting a red heat in preheating a four cylinder en bloc automobile engine. Placed the block on a welding table and made a wall of bricks around it about 8 inches from the casting, which was then filled with charcoal. After lighting the fire did not seem to get the necessary heat. What was the trouble?

R. N., Iowa.

**Answer.**—It looks very much as though you did not allow for sufficient draft. In closing in the casting you cut off the air and naturally your fire did nothing but smoulder. Try placing the bottom course of bricks about 3 inches apart and placing 1 or 2 bricks under each corner of the motor casting. Punch a few holes in the cover of your furnace, and see that there is a good strong draft. An air hose, moderately used, has given good results. After you have finished welding, block up all the holes with asbestos to cut off cold air, while cooling. You will probably find that this will work out right.

## Dangers of Flooding Carburetor.

**Question.**—One of my customers asks me if by flooding the carburetor will he not get an enriched mixture and at the same time not in any way lessen the car's efficiency in dependable travel?

J. H. J., Chicago.

**Answer.**—By flooding the carburetor one does obtain a temporarily enriched mixture, but the value of the flooding is lost if it be done when the cylinders and induction pipe are full of mixture, according to Max Hagelstein, Studebaker service manager. When using the choker the carburetor needle is lifted free of the seat, all air passages are closed and raw gasoline is supposed to be thrown into the cylinders in order that your starting condition will be similar to that when a motor is primed. But ignition does not occur immediately when there is kerosene in solution with the gasoline, and if the choker is used excessively an accumulation of this solution will surely find its way into the oil pan.

"I have seen the owner of an automobile pull the choke switch way on and then press the starter button ineffectually five or six times in cold weather. He finally gets an explosion, but the constant flooding of the carburetor causes this solution of kerosene and gasoline to mix with the oil, thinning it and causing it to lose its lubricating values.

"When starting your motor in cold weather try turning the engine over a few times with the switch off before using the choker. In this way the air is expelled and a thin mixture of air and gasoline is inhaled in its place. Flooding then gives a temporarily rich mixture in the cylinders, and the engine should start at the first trial. This is the procedure the professional driver very often adopts when his motor is cold.

"During a continued cold spell it would be decidedly advantageous for the motor car owner to use fresh oil frequently, draining the oil pan and washing it thoroughly before refilling. Of course, it would hardly be possible for an owner to make a chemical analysis of the old oil to determine whether or not its lubricating qualities had been exhausted, but from its consistency it should be easy to decide if fresh oil is needed. However, with the coming of the warmer months it will not be necessary to do this quite so often. This may add slightly to the operating expense, but it certainly cannot be nearly so expensive as the installation of new bearings, pistons and possibly a set of cylinders."

## A Mechanical Experience That Will Benefit Others.

By J. Ernest Stephens, People's Garage,  
Marion, Ind.

Last fall we had an experience with a 1912 Apperson car that possibly will be of some benefit to some of the readers of the journal.

This car was brought to us from another garage, missing in one cylinder at a speed of from 14 to 20 miles per hour.

At low speed the car would get all cylinders as nicely as any car I ever drove, but at the point stated would begin missing and continue to do so up to 20 miles per hour. Above this it would hit all cylinders as fast as we could hold it in the road.

It had a Stromberg carburetor and any adjusting that we might do would not cure the missing. We ground valves, cleaned carbon, changed spark plugs, spark plug gaps and everything that we ever thought or heard of, all with no results.

The man that owned the car was very patient with it and allowed us to work on it at our spare time, and we assured him that we would not rob him or charge him storage while it was here.

After we had fought the car until we felt that our patience was exhausted, I decided to take the car to the factory and they worked on it to the amount of about \$25 and wrote me the car was ready for delivery. On going after it I found that it was no better than before.

In the meantime we hired another man, and when I brought the car home we got our heads together to study it out. We compared the cars of 1912 to cars of 1917 as to the difference in gas, the difference in size and construction of manifolds, location of carburetor and then decided that the carburetor was too far from the cylinders, also the manifold was too large.

Owing to the odd construction of the manifold it was impossible for us to obtain what we wanted, so we went to the junk yard and got some lead, melted it and poured 12½ pounds in the manifold, filling about one-half the space and giving the gas more velocity as it passed from the carburetor to the cylinders. This caused us to have to change spray nozzles from size 57 to 60, thus greatly reducing gasoline consumption.

After making these changes the car has not given a minute's bother and gets all cylinders at all speeds.

### Cost-Finding and the Average Cost.

The average overhead cost of the average garage may or may not be 11 per cent as is claimed but, according to Jud S. Joslyn of the Joslyn Garage, Rockford, Ill., averages are often misleading and in the garage business as it is now being developed does not apply.

For instance, the accessory department of a garage costs between 16 and 17 per cent to operate. Each department has its operating cost and should be ascertained and figured in when net profits are sought to be determined.

The automobile business is becoming specialized. The dealer in cars has a certain overhead, the storage garageman quite another, the auto repair shop another, and so on down the line. When a business combines two or more of these special ac-

## SELL A TRACTOR UNIT OR TRACTOR

**S**PRING business is now opening up and—listen!—the farmer trade is the biggest element in the entire automobile buying movement. Prof. Holden, the great agricultural authority, has shown that this applies to pleasure cars as well as trucks. Then, it should be clear, the small town dealer dealing with farmers ought to lose no time in taking on a tractor unit or tractor and combine cars sales with tractor sales.

The garageman is the logical man to handle tractors, because he is the man who is called upon to repair tractors when they get out of condition. He is the tractor doctor and understands the "critter." If this is so, he should also make the original sale.

Farmers who have a pleasure car, and they are legion, should be induced to buy a tractor unit. A Ford or other small car and \$195 gives the farmer an equipment that will pull a 2-bottom, 14-inch gang plow 7 inches deep in wheat stubble 2½ miles per hour; it will list, cultivate, disk, crush

tivities the general overhead cost is changed.

Mr. Joslyn stated that many business men, some of them in the garage field, do not know what their aggregate net profits for the year are. They do not figure in proper depreciation, salaries for themselves and members of their families who are employed, interest on money invested, etc. Ten per cent net in the garage business is a bonanza profit; 7 per cent is large, and some of the boys doing a big business get off with only 4 per cent.

### A Northern Michigan Association.

The Automobile Dealers' Protective Association has been organized, with headquarters at Calumet, Mich., its jurisdiction extending over Calumet, Laurium, Tawas Lake, Hancock, Houghton, Chassel and the entire copper country. The effort is in line with the national and state movements for better garage and dealer conditions and for co-operation with the police authorities in protecting cars against theft.

The used car problem came up for con-

clods, pull stumps, spread manure, pull trees, grub, smooth, roll, mow, hoist hay, pull binders and diggers, haul crops, drill, grade, drag, stretch wire, churn, etc. In twenty minutes the car can be changed from a tractor into a pleasure vehicle, and in another twenty minutes back again.

Any reader desiring an agency for such a tractor unit—and this means

you—should get busy at once. Drop a line to this office and we will put you in touch.

The smaller tractors make a desirable agency for sales to farmers who have no pleasure cars.

These tractors sell from \$365 to \$900. List of these tractors may be obtained on request. Then there are the big tractors.

The agricultural implement dealers have this trade now in most towns. They have it because the garageman has not lived up to his opportunities. *Change this situation now*, and call upon the AMERICAN GARAGE AND AUTO DEALER for every assistance it can render in winning over this valuable business.

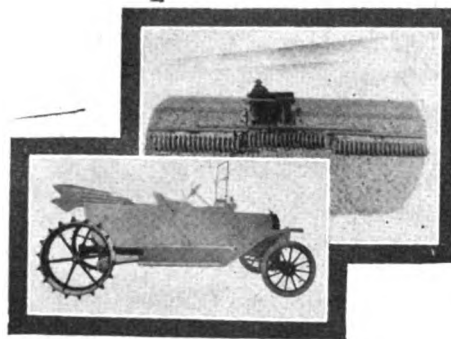
sideration and efforts will be made to so handle this branch of the business as to turn losses into profits. This association will also take part in the movement to secure deliveries of cars and thus overcome the handicap of the present freight car shortage.

The A. A. G. O. extends to the new organization hearty greetings and assurances of its co-operation in all of their efforts for better retail conditions.

### New Auto Building at Scranton, Pa.

The Conrad Motor Car Co., Scranton, Pa., have moved into their new \$100,000 home, which is one of the most complete automobile buildings in the country. It is 65x165 feet and corners on Wyoming and Mulberry streets.

The show room on the main floor has a fine display of Dodge Bros., King, Maxwell and Jeffery cars, of which this company are the local agents. The second floor is used for the repair work, painting, etc.



**REMOVING INTAKE MANIFOLD.**

When removing the intake manifold of a Ford car, first loosen the bracket on the front stud bolt on manifold. Turn it in an upright position and tighten the nut until the yoke presses against the exhaust manifold. This will hold the exhaust in place while removing the intake and save the time of replacing both manifolds when assembling.

H. H. N., Indiana.

A very good suggestion, but I believe I can add something to it.

Turn both front and rear yokes and tighten them against the exhaust manifold in order to hold it in place while the intake is being removed. This will prevent the exhaust springing out at the rear end as it has a habit of doing when only held at one end.

\* \* \*

**DOES COLD AFFECT GASOLINE CONSUMPTION?**

**Question.**—It is a matter of common knowledge that automobiles consume more gasoline in the winter time for the same mileage than they do in the summer time. Will you kindly inform us where we can get detailed information on this line; that is, the ratio of consumption of gasoline in proportion to the weather conditions and as to the considerable differences in the temperature.

Co., Chicago.

**Answer.**—I think you could obtain more exact data of this kind from a carbureter concern than anywhere else. I question whether there is actually any great increase in fuel consumption due to low temperature alone. I have found that the density or rarity of the atmosphere and the dryness or moisture in it does cause a great difference and have sometimes thought that the cold alone had an effect but was always able to trace the increase to some other cause. This, of course, after the motor is thoroughly warmed up. It will require more gasoline up to this point.

Perhaps some of our readers have some knowledge of this that would be interesting.

\* \* \*

**LOCATING A KNOCK.**

**Question.**—I have an Oakland Six that has developed a knock that we cannot find. All rods and bearings are in good shape. The Oakland agency said it was in the oil pump and put a kind of standpipe or dome on it and put springs in to hold the check balls in place, but it did not help. Can you suggest anything?

W. H. C., Michigan.

**Answer.**—I have seen a few cases of this kind caused by the pump spring being broken. With this motor, this will cause a knock that sounds almost exactly like a loose connecting rod. The pump, under this condition, will often still pump oil, although not so fast as before. The first symptom is a kind of a scraping noise followed a little later by the knock.

Take a look at the pump spring and let me know what you find.

# How to Build Garages and Shops

By E. B. HINRICHSON, A. A. G. O. Mechanical Expert

**O**UR issue of December, 1916, contained an announcement in this department, part of which was as follows:

"If you are planning to build or remodel, we will be glad to send floor plans and specifications for arrangements from which you may gain some valuable hints."

If I were looking for an advertising agency, I don't think I could find a better one than THE AMERICAN GARAGE AND AUTO DEALER. In the few months since this issue appeared we have received nearly one hundred requests for this service and have been able to give some assistance to most of the applicants.

Among the requests were many who wanted full building design and architectural plans and building specifications. We had intended to make up sets of plans adaptable to all conditions and furnish these, but found that the requirements were so varied that this was impossible. It was also impossible to draw up plans for each individual, for free distribution as the requests came in too fast to be cared for in the regular way.

We wrote to these applicants, explaining the case and nearly all of them replied that, if we were in a position to do so, they would be willing to pay a regular architect's fee for the sake of good service and a square deal. This led us to get in touch with several structural engineers, and after eliminating the usual profits and additional charges for supervision, etc., we found that the work could be done at a great deal less than is usually charged. We therefore decided to try this plan:

**A New Association Service.**

We will furnish full plans and building specifications made up for each individual case covering that case's particular requirements. These plans and specifications will cover every detail as to workmanship and material, the proper stresses will be figured and recommendations as to building devices given if desired.

It is the purpose of this department to enable the members to build their garages at the lowest possible cost, and at the same time construct buildings of proper size and quality, laid out along the line of efficient garage operation. Readers of the journal who are not A. A. G. O. members will be given advice and information, but the institutional activities of this department will be restricted and justly so, to members.

The most essential thing in designing a building of this kind is to utilize all available space, also the proper lighting and heating and arrangement of display and office rooms.

A matter which is really of the utmost importance, but one which is often overlooked is the appearance of the building. Garage construction is striving in the way of permanence, convenience and artistic appearance.

**Increase Convenience and Appearance and Not the Cost.**

If careful thought is given to designing a garage, a number of desirable features may be incorporated that will not materially increase the cost, yet will add considerably to the convenience and appearance of the structure.

We have concentrated on garage designing which will enable the members to secure plans and specifications for modern and attractive garages at small cost.

This service is for members only, but might be made to cover private garages for individuals not dealers, at the request of a member.

We will do this work on a time and material basis. That is, making a charge only for drafting time and material used, such as tracings, blue-prints, etc. This charge will be made to cover only the actual outlay of the department and not the department's own time.

This does not mean that a charge will be made for floor plans and arrangement suggestions such as have been furnished in the past. Our ideas and recommendations along these lines are always at the service of members and readers free of charge.

\* \* \*

**A REMARKABLE WELDING RECORD.**

By M. R. Cochran, of the Glasgow Garage and Machine Works, Glasgow, Mo.

In the February issue of AMERICAN GARAGE AND AUTO DEALER, on page 42, we notice with especial interest an item regarding "Efficiency of Oxy-Acetylene Welds," which ranges from 50 to 95 per cent, owing to conditions.

This interests us especially, as we do quite a large welding business, including most everything from farm implements to automobile parts, and a great deal of heavy work from steamers on the Missouri river. We believe we are getting 100 per cent efficiency from our welding.

During the year 1916 we welded 1,014 pieces from very small to nearly one-ton parts and have not had one single break during the year's work for 1916.

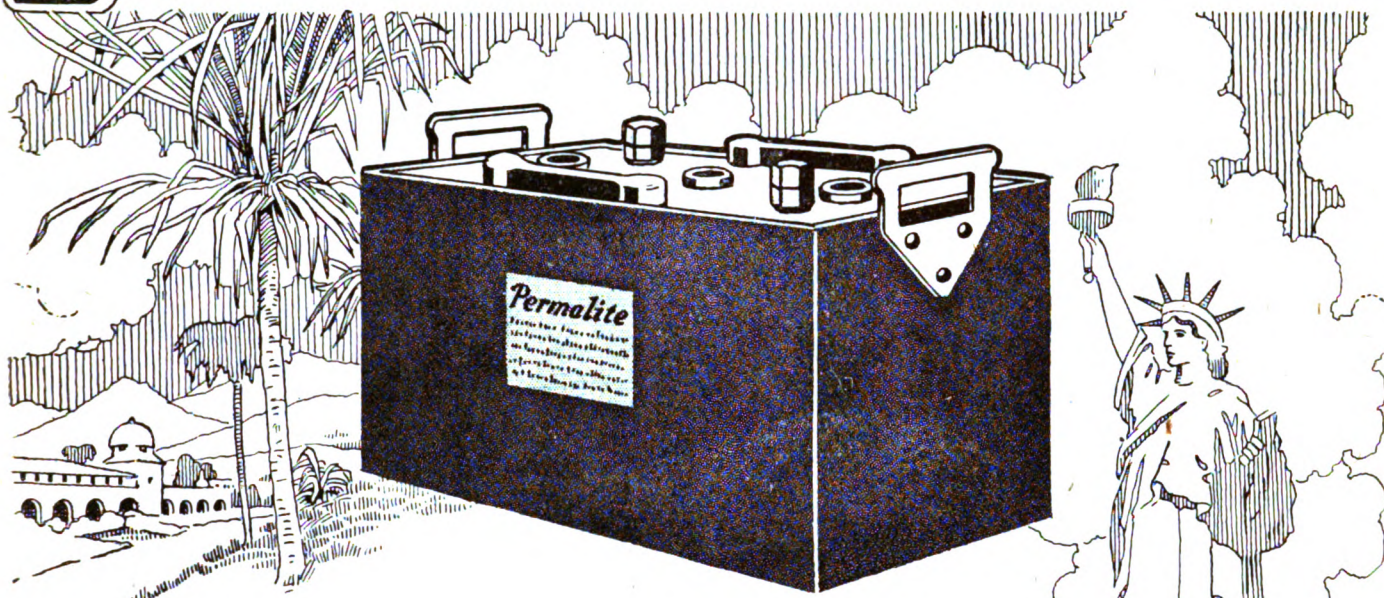
From the time we installed our plant in May, 1914, to January 1, 1916, out of over 3,500 pieces welded we had sixteen small ones break in the weld.

We do not have any trouble with the metal breaking close to weld, as you speak of in your article.



# Permalite

## THE NATIONAL BATTERY EXCHANGE SYSTEM

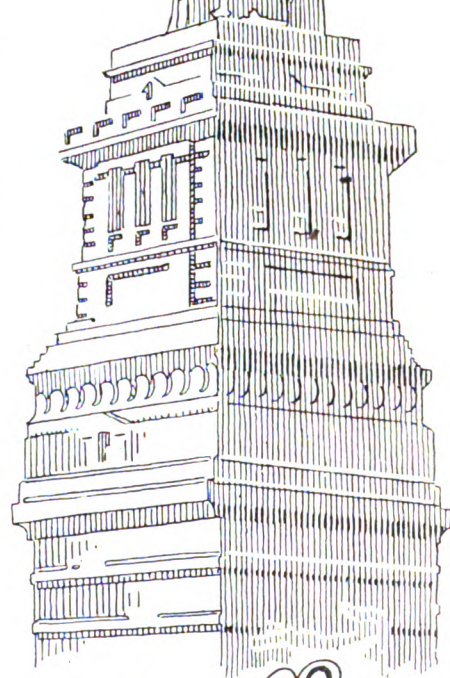


**From New York to California**  
**\$1.25 EXCHANGE FEE EVERYWHERE**  
 PERMALITE SERVICE IS STANDARDIZED

The owner of a *Permalite* Battery Lease can drive up to a *Permalite* Exchange Depot, anywhere in the United States, and in fifteen minutes drive away with a fully charged battery in perfect condition, at a fixed, STANDARDIZED price of \$1.25 for the exchange.

The charge for a *Permalite* Lease is about the same as the cost of any first-class battery. After you have once leased a *Permalite*, the exchange fee of \$1.25 is the *only* fee you ever have—no unexpected and doubtful charges for repairs, or the necessity for buying a new battery ever confront you. From the standpoint of the user, a PERMALITE battery never wears out!

*In territory where we are not already represented, we have an attractive proposition for dealers who can measure up to the standard of PERMALITE. Address Dept. AG3*



# Permalite Corporation

INDIANAPOLIS, IND., U.S.A.



# Garage and Auto Dealers' Insurance

*THIS department is edited by MATTHEW WHITE, insurance commissioner of the A. A. G. O., who desires a free discussion of all subjects dealing with the insurance problems, fire and casualty, of our readers and members. Application blanks, etc., on request.*

## He Paid 5 Years Premium

Our representative ran into a queer case lately. A garage and auto dealer stated that he had paid for his insurance on building and contents for five years. He was told it was impossible. A little more questioning adduced the information that when he made the loan from the bank to build, he was compelled to borrow enough money to pay up his fire insurance for five years along with the loan.

At the then rate on his garage, it is well known that insurance companies of the best kind do not issue a policy on a garage for a longer period than one year. In the meantime, who is holding this man's money and who is getting the commission on the original policy and the renewals since then? They should worry about high rates on the garage property of our unfortunate friend.

We think our representative stirred up something that will take more than a fire extinguisher to quell.

## Isn't It Startling

In our January issue, under the Department heading of "Garage and Auto Dealers' Insurance," there was quoted from an article or statement that appeared in the *Western Underwriter* as coming from Superintendent of Insurance Rufus M. Potts of Illinois.

It stated that in the year 1915 the Insurance Department of Illinois had obtained complete figures as to the loss ratio in Chicago—that is, the relation between premiums charged and losses paid.

It is pointed out that the average loss ratio during 1915 was \$37.70 out of every \$100 of premium paid. Does this not prove that Inter-Insurance, properly managed, accepting only preferred risks, does prosper and return to its subscribers handsome amounts now being diverted to the pockets of many who are principally interested in high rates and very glibly and ponderously inform the submerged ninetieth that there is something almost supernatural in their gift to operate and manage an insurance company.

It is organization, co-operation, confidence, pure and simple; you are now supplying the money, every dollar of it. Why not build for yourselves? Take, for example, the foregoing figures of Mr. Potts, the chief insurance officer of the State of Illinois, the only official who could legally

obtain them, and see how much of the money paid in is not used to pay losses. The companies get the balance.

We state that in the operation of our Inter-Insurance Exchanges the operating expense will be limited to 25%. This amount added to the Chicago loss ratio of 37.7 would leave a refund to our subscribers of 37.8 per cent. But we don't accept combustible buildings, inflammable stocks, blast furnaces, soap factories, wooden garages, junk shops, etc. Our subscribers are located in brick, concrete or cement block buildings and scattered far and wide.

We also minimize the conflagration and moral hazard. If Chicago's average loss ratio is 37.7 (and I don't doubt it), under more or less deficient metropolitan conditions, our loss ratio ought to be not more than 25 per cent; this added to the 25 per cent as the operating expense of the Exchange ought to leave an available refund of 50 per cent.

We are not pioneering this plan. The path is well trodden by such lines of business as Hardware, Lumber, Drugs, Livery, Laundry, Clay Products, Dry Goods, Department Stores, Coal Mines, General Manufactures, etc.

## We Helped Do It

Ten years ago Messrs. White and Carr helped to form the American Druggists Fire Insurance Co. as a means of saving the retail drug trade, with which they were then connected, a part of their insurance cost. The saving has ranged from 25 to 50 per cent.

That concern, according to its tenth annual report just issued, has assets valued at \$480,000.00 and wrote \$19,000,000.00 worth of business in 1916. Its annual premium receipts are now around \$200,000.00.

CUT THIS OUT, FILL IN COMPLETELY, AND IT WILL BE ATTENDED TO AT ONCE

### American Garage and Auto Dealers Inter-Insurance Exchange

(Insurance Department A. A. G. O.)

53 West Jackson Boulevard

CHICAGO

MATTHEW WHITE,  
Insurance Commissioner.

I am interested in insurance of the following character and wish you would send me full particulars without any obligation on my part whatever:

- |   |   |
|---|---|
| <input type="checkbox"/> Fire Insurance on Building | <input type="checkbox"/> Fire Insurance on Contents       |
| <input type="checkbox"/> Workman's Compensation     | <input type="checkbox"/> Employer's Liability             |
| <input type="checkbox"/> Public Liability           | <input type="checkbox"/> Property Damage (inside and out) |

Name..... Address.....

## Others Save Money, Why Not You?

Brother Garagemen and Dealers:

Why procrastinate or delay longer? Why not act at once and get the benefit of reduced insurance rules, both fire and casualty?

You have positively been paying too much for your fire and liability protection. Look up your policies, send in the rates you are paying, the expiration dates and a few other essentials, and we can figure out for you exactly what it will cost you under the association's plan and just how much your saving will be.

Under the present plan involving re-insurance we absolutely guarantee you a saving of 10 per cent, and this has reached as high as 76 per cent in one instance (\$425.00 saving); and when a sufficient number of garagemen, shopmen and dealers have given this project their support, we will go on an inter-insurance basis and greatly increase the present saving.

Fellow craftsmen, can't you see that it is up to you to pull down the cost of your insurance? We can go no faster or work out no bigger result that you enable us to do. This is your proposition and the only strictly garage and auto dealer insurance exchange in the United States, so far as we know.

Only you and your brethren of the craft have or can have any voice in its affairs, and you are freed by it from sharing, as you now do, in the more hazardous risks prevailing in other lines of business.

Cut out the blank below and send it in, with or without the information we have already asked for. Now is the time. Do not delay. It makes no difference if your present insurance policies do not run out for some time to come. Prepare for the future.

# ADVANCE



## Never loses its grip Kills jar and vibration

*Outlasts 3 sets of ordinary linings*

**N**OW for the first time the planetary transmission is perfected. It's a bully good system — really the best of all. Most positive, simplest, quickest to respond. Its only weakness has been ineffective lining.

When a Ford car jars, jumps, jerks — when it rattles and clatters under the brake, it is not the fault of the car or the maker of the car. It couldn't be made better. Neither could the transmission itself be made any better.

**ALL THIS NOISE, THE JUMPING, JARRING AND JERKING IS DUE TO POOR TRANSMISSION LININGS.**

After very little use, the ordinary lining becomes hard-surfaced and glassy from the pressure, friction and constant bath in oil. It loses all of its gripping properties and becomes as hard as metal. When the brake pedal is pressed, the lining can't hold. It grips and loses the grip. It's that grip and slip, that terrific vibration, that sets the car to quivering from radiator to tail light — that causes the awful jar and jerking vibration — that racks the heart out of the Ford, loosens nuts and bolts, spreads joints, causes rattles.

### Advance Cork Insert Transmission Linings Can't Slip

The cork surfaces take hold instantly — engage smoothly and evenly. Just the slightest pressure gets results. But no matter how hard you press the pedal you can't make the car jump or vibrate. There's a continuous, positive, steady engagement.

### Outwear Three Sets of the Ordinary Lining

50,000 miles — 45,000 miles — 18 months' driving on one set. These kind of reports are coming in to us all of the time. Affidavits in our offices prove the accuracy of these claims. Think what that means. Instead of having linings put in every three months or so, here are linings that last for years, and at the end of that time are still giving the same satisfaction as when they were first installed.

### You Never Heard of Any Lining Standing Up Like This, Did You?

No! You bet you didn't. Without advertising, without a salesman on the road, this lining has achieved a big sale *on its merits*. Think what will happen now with **REAL PUSHING** back of it.

## Something better for a great big need

*Big advertising, strong selling helps*

**H**ERE is a staple article — something every car has to have — something that is not a luxury but a necessity — something you can honestly recommend to your pet customer because it is *right* — and get something with all the punch of a *new specialty*. Think of it! Specialty originality, specialty profits on necessity volume of sales.

### It Has Performed

ADVANCE CORK INSERT LININGS is new in that it has never been advertised. But in performance it is not new. It has been tested in actual service for two years. In a Ford jitney it has lasted 50,000 miles. The biggest jobbers in the country are handling it now. They are cataloging it. You as a Dealer know that an article must be right before they buy it.

### It Has a Popular Appeal

Every Ford owner knows that big cars use cork to make the multiple disc and cone clutches work smoothly. He is ready to try it! And if he tries it, he's sold clear up to his eyes in the first five minutes. He knows you have done him a big favor and he knows he's made a good buy.

### Powerful Advertising

The most powerful sort of advertising campaign is behind ADVANCE CORK INSERT TRANSMISSION LININGS. FIVE FULL PAGE ADS start in the SATURDAY EVENING POST with April 21st issue. Live dealer helps will focus this demand locally on your plan of business.

### Direct to Owner Campaign

In addition to window displays and signs — counter cards and circulars — a direct to owner campaign will refer the people of your neighborhood to YOU as the place to buy this wonderful lining.

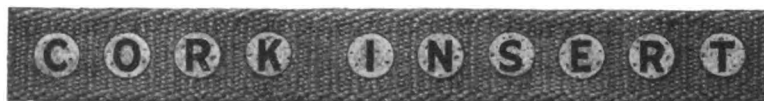
**ORDER NOW** your first set of ADVANCE CORK INSERT TRANSMISSION LININGS. It lists at three dollars — you'll be allowed the regular discount. **GET A SET QUICK — KNOW "EACH INSERT" — HOW IT ACTS AND WHAT IT DOES — GET READY TO SELL A BUNCH OF THIS LINING THIS SEASON.**

*If you want to order through your jobber mention his name and if a Ford owner orders direct we will allow you credit. Write today.*

**Advance Automobile Accessories Corp.**

56 East Randolph Street, Chicago

# ADVANCE



**FORD TRANSMISSION LININGS**

**They Make  
a  
Great Car  
Greater**

**A Live  
Profit Maker  
for  
Live Dealers**

# Auto Sales Originate on Farm

**The Production of Corn, Cotton and Hogs Measures Total Automobile Sales—Strong Position of Country Garageman-Dealer**

PROF. P. G. Holden, director of the Extension Department of the International Harvester Co., has emphasized one point in his lectures that should be taken home to the minds and hearts of the automobile trade, especially the manufacturers and the retailers.

ing power that eventuated in auto production and auto sales is generated on the farm."

Iowa has 200,000 cars. Her population is 2,224,000. This is 1 car to every 10 people.

Chicago has 75,000 cars; population, 2,393,000; 1 car to 30 people.

*the ones that should be most assiduously cultivated by the car manufacturers? Does it not also mean that every garageman, repairer and supply man in these sections should get into the car sales game and reap or should reap his share of automobile prosperity?*

## Electric Vehicle Makes Splendid Record.

A. Jackson Marshall, secretary of the Electric Vehicle Section, National Electric Light Association, advises the AMERICAN GARAGE AND AUTO DEALER that the new model of an electric passenger vehicle manufactured in Detroit in a recent run from New York City to New Haven, Conn., made a highly commendable record. There were three passengers carried, and the distance of 88.2 miles from Columbus Circle, New York City, to the Hotel Taft, New Haven, Conn., over an extremely hilly, although smoothly constructed, road, was accomplished in 3 hours and 45 minutes including all stops, traffic delays and reduction of speed through thickly populated centers, and on a single charge of the battery.

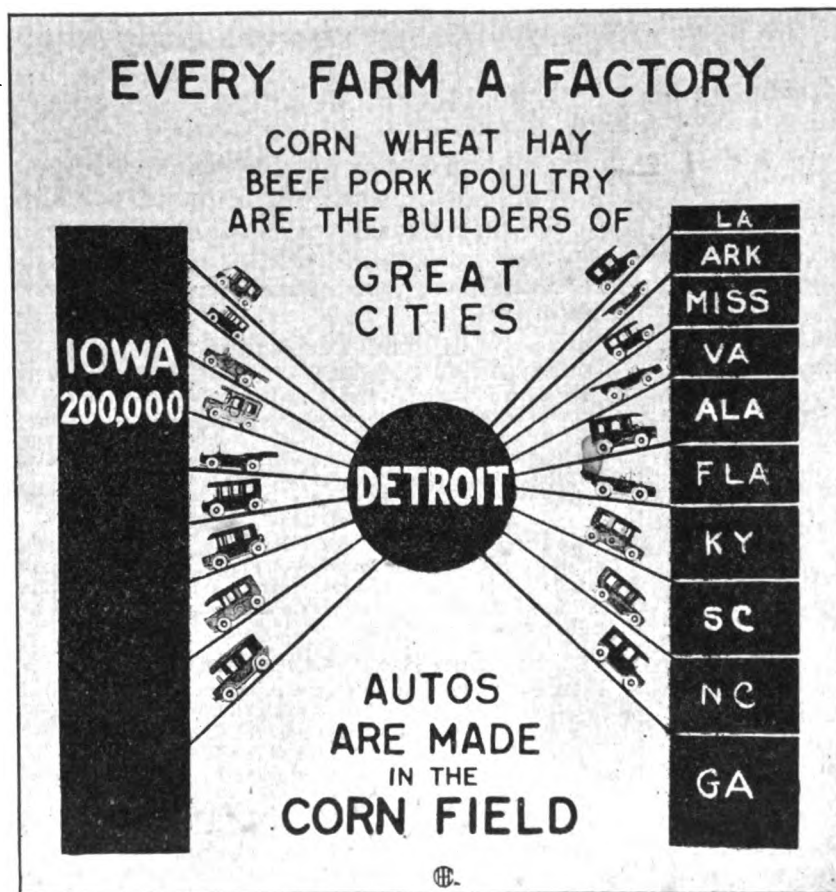
While an average speed of 23.4 miles per hour over a distance of 88.2 miles may not arouse the interest of the speed fiend, yet when it is remembered that this speed is maintained over average roads, the speed is about as great as can be maintained by a gasoline car with comfort to the riders and with safety to pedestrians.

This new model is furnished with a control system which provides for the safety of the driver and other occupants. It consists of an automatic device which, by the pressure of the foot on a pedal, even though the car is traveling at full speed, instantly cuts off the current and applies both brakes regardless of the position of the control lever. It is impossible to start the car again until the control lever has been returned to neutral position.

It would appear that this run is evidence of the "electric's" ability to make an average long run, covering the ground at a comfortable speed, with the fears of possible breakdowns more or less eliminated. A series of runs, moreover, it has been stated, has recently demonstrated the fact that an electric auto can be very satisfactorily used for interurban travel. These runs averaged distances of about 90 miles per trip, and were conducted with practically no trouble of any sort. One of the longer runs was from Chicago to Milwaukee, a distance of 101 miles.

## Burt Joins Amazon.

F. C. Burt, an Akron tire man, has joined the sales force of The Amazon Rubber Company at Akron.



Car sales mean automobile prosperity for both maker and dealer, and cars sales are measured by buying power. "Buying power in this country," said Prof. Holden, "is generated on the farm. This statement may be modified when applied to very small areas of our country, but broadly speaking, it holds true as to states and sections. Note the accompanying illustration which I used in my lecture at Detroit.

"What does it mean? It means that the autos are made in the corn-fields. Car sales are made on the farms. In other words, the purchas-

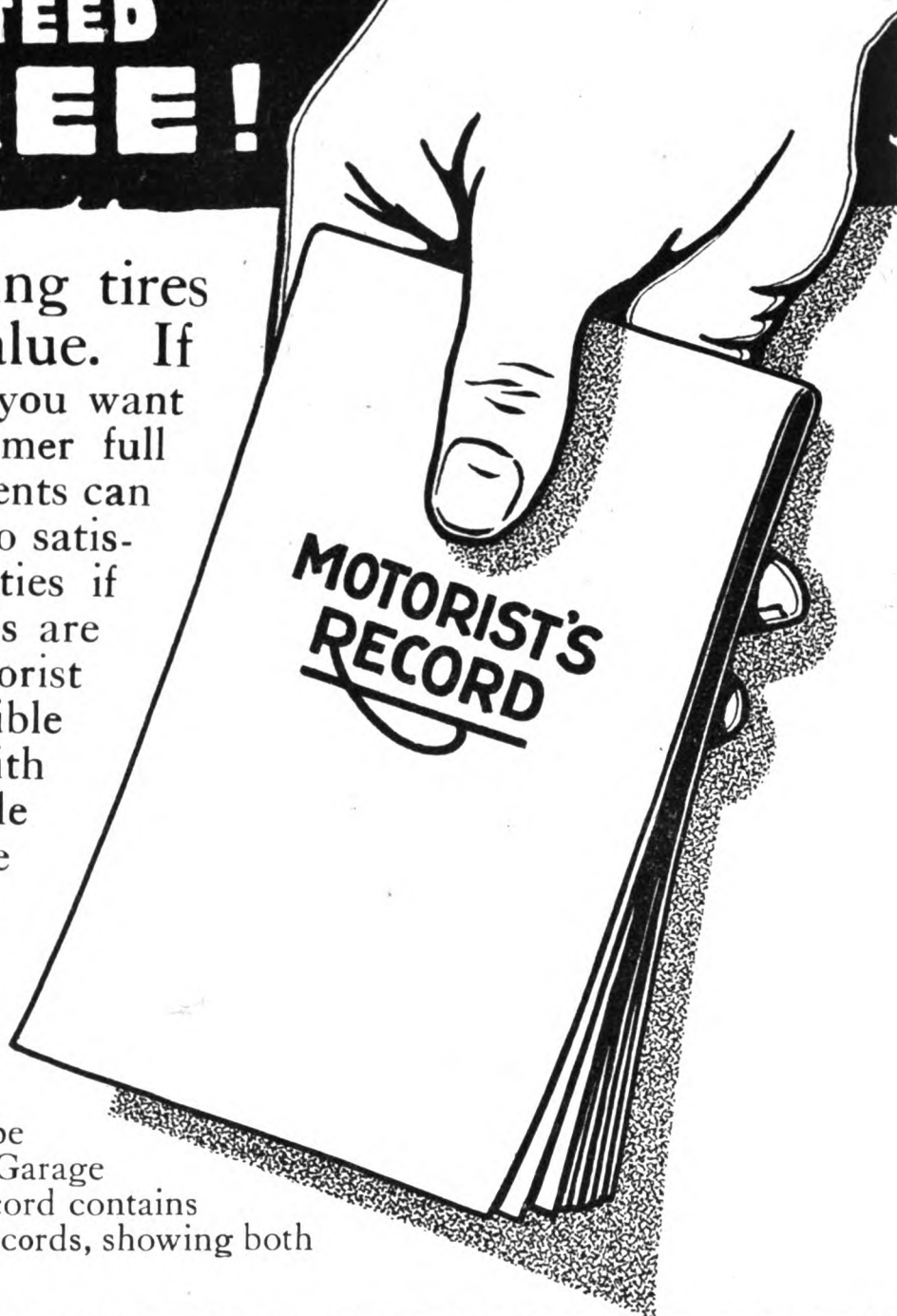
Detroit has 27,000 cars; population, 537,650; 1 car to 20 people.

Iowa produces farm crops to the value of \$975,000,000 annually. The 10 states shown opposite raise crops aggregating the same total. Iowa has 200,000 cars in use; the 11 states likewise have approximately same number of cars in use.

*If car sales spring from farm products and the value of farm products measures automobile purchasing power, does it not clearly prove that the garagemen-dealers in the small towns in the great Mississippi valley and other fertile agricultural sections are*

# TIRE ADJUSTMENTS GUARANTEED FREE!

If you are buying tires you want full value. If you are selling tires you want to give your customer full value. Tire adjustments can be made easy and also satisfactory to both parties if exact mileage records are available. Our Motorist Record makes it possible to keep this record with least amount of trouble and the Records are free to Owners and also to Dealers and Garages for distribution to customers. All that is necessary fill out coupon below and mail today. The offer will not be repeated in the American Garage & Auto Dealer. The Record contains tables for all kinds of car records, showing both efficiency and cost.



## Owners' Coupon

Enclosed find stamped addressed envelope for free copy Motorist Record.

Name .....

Address .....

Name of Car .....

Do you do own repairs? .....

Buy tools from..... A.G. & A.D.

## Dealers' Garage Coupon

Please send free of all charges 50 Motorist Records which we will distribute to owners.

Name .....

Address .....

Do you stock tools for resale? .....

Name of jobber..... A.G. & A.D.

**Mail to Walden-Worcester, Inc.**  
WORCESTER, MASS.

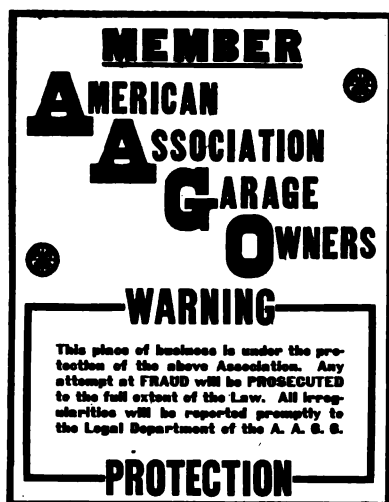


# The A.A.G.O. and its Activities

## The Association's Protection Card.

One of the A. A. G. O.'s field men, in soliciting a membership at an Ohio garage recently, was referred to a local banker who was a partner in the business and decided all such matters.

The field man went to the bank and laid the proposition before the banker, who was favorably impressed with the general objects of the association and the record it had thus far made in membership growth, etc. Then the solicitor commenced to enumerate the specific and direct benefits. One of the first men-



tioned was the protection card shown herewith. "You need not go any farther," said the banker, "that card alone is worth the price of your membership. Its moral effect on the would-be swindlers and fakers that infest our trade will save the garageman or dealer many times more than it costs each year. These crooks make the unorganized individuals their prey; they steer clear of organized groups which reach out over the nation."

"I know what I am talking about," he continued, "because we bankers have been using a sign of similar import for years and know its benefits."

## Get Your Share of the Tourist Trade.

The nation-wide campaign of protection against overcharging the tourist trade which has heaped odium upon our craft because of the high-handed tactics of a few, has attracted much favorable notice. The bulletin here shown has been posted in nearly all of the motor clubs of the United States and has served to direct tourists to garages displaying the A. A. G. O. sign, where they can be assured of fair treatment.

The prices named are maximum. Many

## AMERICAN GARAGE AND AUTO DEALER

Official Publication of American Association of Garage Owners  
NATIONAL HEADQUARTERS  
53 W. JACKSON BLVD., CHICAGO  
Telephone Harrison 5678  
Branch Offices, New York and Detroit



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### DEPARTMENT OF BUREAUS

Organization Collections Publicity Insurance  
Employment Mechanical Legal Sales  
Account's Cost Find'g Purchasing Information

A. A. G. O. members' charges are lower. The glass sign mentioned has been discontinued, as it would not stand shipping, and members are now so placing their outside signs as to benefit by the illumination of other signs or are illuminating them by special lighting equipment.

Every A. A. G. O. member should display this sign and obtain his full share of the tourist business. This work of ours has the heartiest indorsement of the A. A. A. touring officials.

## A Lien Law for Ohio.

By A. P. Meng, Field Representative.

FELLOW garagemen and the craft of Ohio:

Your state has made itself heard, it did itself proud. It has come forward and demanded of its legislators, "its servants," the need of a lien law that would protect us, the garageman, repairman, accessory man and dealer, against the dead beat or the man who was out trying to skin us.

This law, fellow craftsmen, is a twentieth century proposition, and as more and more machines make their appearance it was to be expected that some day we should have this law introduced and passed so that we would be in harmony with other states.

By the way, brothers, did it ever occur to you that this up-to-date (?) state of Ohio was the only state that had *no* lien law? Well, almost; this state of Ohio and Nevada are the only two states that have no lien laws for the repairman or garageman for labor on autos. The only two states in the Union up to January 10, 1917, that had no provision for the auto industry, but since January 10, 1917, we in Ohio came forward and have at this writing something concrete to offer.

It is House Bill 484 by Hon. W. A. Marker of Van Wert. This bill follows the lead, in some respects, of the much-talked of New Jersey lien law, and Mr. Marker and others having the measure in

charge were wise to the fact that the New Jersey law had been attacked by New York lawyers, who shouted confiscation when they saw the clause that might give a small balance to the overseer of poor.

But the AMERICAN GARAGE AND AUTO DEALER of January, page 10, told its members in New Jersey not to be alarmed and do business just as usual, not overcharge their customers, do the right thing as business men, "Live and let live," give a man a show, and if he was up against it and had to get credit give it to him. But if after that credit was exhausted and he did not pay his bill, then don't hesitate but use the New Jersey law, you of New Jersey and don't get cold feet,

## NOTICE: To Members of this Club

### The American Association of Garage Owners

C. M. CARR, Sec'y-Treas. 53 W. Jackson Blvd., CHICAGO, ILL.

The Big, National, Country-wide Organization of Garage Owners, Automobile Dealers and Repair Shops

### WISHES TO ANNOUNCE

That all of its Members displaying the ENAMEL SIGN projecting from the Door, or the NIGHT SIGN in the window, reading



ENAMEL SIGN



GLASS SIGN

Have agreed to abide by the following MAXIMUM

### Standardized Tourists' Prices for Repairs and Storage

	Towns over 10,000	Towns under 10,000
Mechanic, Class A . . .	per hour, \$1.00	per hour, \$0.75
Helper, " B . . .	" .60	" .50
Apprentice, " C . . .	" .40	" .30
Tourist Storage, . . .	per day, 1.00	.75
	per week, 5.00	3.00

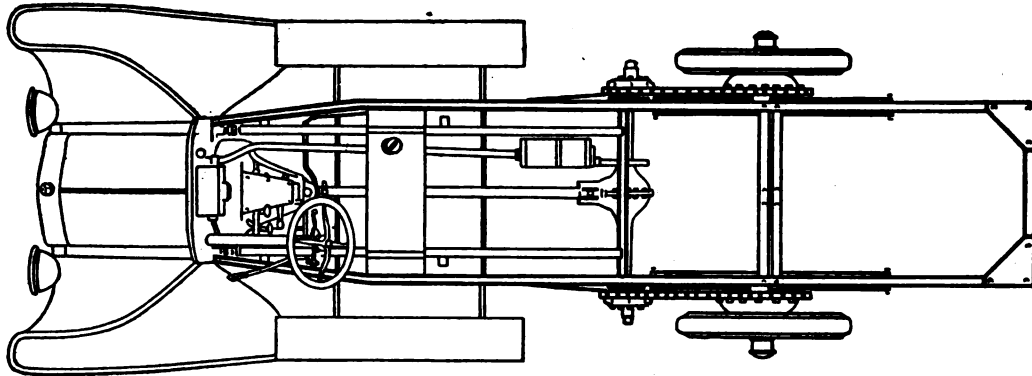
Members of this Club, when Touring, should look for these Signs displayed by A. A. G. O. Garages and Dealers and be assured of

Many Association Garages Charge Lower than Above Prices

**FAIR TREATMENT**

Please Report Violations of Above Schedule to A. A. G. O.

# ANNOUNCING Little Giant Convert-a-Car



## The Year's Biggest Profit Opportunity

After a testing period of months, the Chicago Pneumatic Tool Company now announces that their Ford truck-unit is ready for dealers.

This announcement was withheld, though a large number of Convert-a-Cars were in daily service, until we could adequately take care of dealers.

Right from the start, Convert-a-Car has been a great success. It couldn't be otherwise—

Because it is made by the \$12,000,000 Chicago Pneumatic Tool Company, whose resources are wide as the world, whose experience of 23 years in tool-building is reflected in the sturdy, satisfactory performance of 11,000 Little Giant trucks—some of which have already given 9 years of eager service.

That is why there are so many sure-fire prospects for the Convert-a-Car. The

absolute guarantee and long reputation of a great tool-making and truck-making institution is back of it.

Buyers everywhere recognize and realize the proved satisfaction that Little Giant certifies on delivering better—for less.

The profit opportunity for dealers is greater than usual because this truck-unit is not a stock-selling proposition organized over night to make the most of a new demand.

We are going to make Convert-a-Cars in quantity, and with Little Giant quality. The Little Giant Convert-a-Car must make good.

We couldn't afford to trust our reputation gained in long years of honest sincere truck-making, to this Convert-a-Car, unless it was in every way a real Little Giant.



**Dealers — Act NOW!**  
**Send the Coupon or**  
**wire TODAY!**

**Chicago Pneumatic**  
**Tool Company**

Truck Dept.

1615 Michigan Ave. CHICAGO

Chicago Pneumatic Tool Co. (Dept. 1)  
1615 Michigan Avenue  
Chicago

Send me complete information about Convert-a-Car, and your profitable proposition for dealers.

Name.....

Address.....

just because some wiseacres think the law is wrong. Then Kansas, Oklahoma and New Mexico introduced the New Jersey law in their legislatures and are likely to get it through.

But to come to the point: Both Mr. Marker and myself were wise and improved on the New Jersey law in such particulars as experience developed. While the text of House Bill 484 is printed on another page it is only in a stage of development and in next issue will be set forth in a still further improved form.

In closing let me say that the A. A. G. O. is the only organization, so far, that has a personal representative on the job—this particular garage lien law job—at the Ohio capital, who is watching, guiding and doing all in his power to get an act for our craft that they so greatly need. This organization wants your support today so that it can do more for you tomorrow.

It is here to stay, and urges state and local bodies in the old Buckeye State to join hands with us and put House Bill 484 on the statute books.

The A. A. G. O. is behind every movement in the retail branch of our industry to make conditions better—helping others, or working alone as the situation warrants. Help make it the most powerful organization in the world. It deserves to be.

### Raised Prices at El Reno, Okla.

The five garages doing business at El Reno, Okla., have raised prices "on account of the increased cost of labor and material." Bro. F. Sheckler, of the Martin Garage, writes: "Inclosed find newspaper clipping showing what the A. A. G. O. has done for us here." The new prices are those recommended as maximum prices for tourist trade and the home trade are to be asked to pay the same figures.

### Look Out.

R. J. Barr, garageman and Ford dealer at Troy, Ala., wants the assistance of the field in locating Neil H. Austin. Austin as a tourist passed through Troy with his car and patronized Bro. Barr to the extent of \$10, paying his bill with a check on the First National Bank, Springfield, O. The check was returned unpaid and a letter addressed to Mr. Austin was forwarded from Springfield to Alliance, O., then to Canton, O., and then returned to Mr. Barr as unclaimed.

\* \* \*

Clay Prosser, Scottsburg, Ind., informs us that "Touring Information of America," located at Kansas City, Mo., collected \$15.00 from him last spring and agreed to furnish a certain specified number of road guides early in the summer but did not do so. Have any other members or subscribers been similarly treated?

## The Ohio Lien Bill Now Before the Legislature.

The garagemen, repairers and auto supply men of Ohio, under the leadership of the A. A. G. O., are making a fight to put the following bill on the statute books of Ohio:

82d General Assembly, Regular Session, 1917.

Mr. Marker.  
H. B. No. 484.

### A BILL

Providing for a lien upon motor vehicles for labor, material, storage and accessories furnished therefor.

*Be it enacted by the General Assembly of the State of Ohio:*

SECTION 1. All persons or corporations engaged in the business of keeping a garage or place for the storage, maintenance or repairing of motor vehicles, and who in connection therewith store, maintain, keep or repair any motor vehicle or furnish gasoline, accessories or other supplies therefor at the request of or with the consent of the owner or his representative, whether such owner be a conditional vendee or a mortgagor in possession or otherwise, have a lien upon such motor vehicle and any part thereof for the sum due for such storing, maintaining, keeping or repairing of such motor vehicle, or for the furnishing of gasoline, accessories or other supplies therefor, and may detain such motor vehicle at any time against such owner or mortgagor until such sum or sums are fully paid.

SECTION 2. Any persons or corporation acquiring a lien under the provisions of this section shall not lose such lien by reason of said motor vehicle or part or parts thereof being removed from the control of the person or the corporation having such lien. The lien of such bailee, garage keeper or repairman shall continue and extend to his right of possession of such motor vehicle or parts thereof against such owner or mortgagor. In case a motor vehicle or any parts thereof are removed from the possession or control of the person or corporation having such lien, such person or corporation or bailee may, by an action in replevin, retake possession of the same from such owner or mortgagor wherever found, and in such action he shall have the amount and validity of his lien passed upon, determined and enforced, but such action shall be commenced within three months from the time such lien was created. This act shall take effect immediately.

### Automobile Preparedness.

"Mobilization on the high speed includes the very promptest assembling of the individual units in each state at the concentration camps," asserts Chairman John A. Wilson, of the Military Preparedness Committee of the American Automobile Association, who has been spending much of his time recently in the national capital and is in touch with various phases of "making ready."

"The answer as to how the organized motorists of the country can do their part in the plans now being formulated for defense," continues Mr. Wilson, "would seem to lie particularly in the direction of transportation. From all over the country have come repeated offers from A. A. A. clubs and members to count upon them in any preparatory program into which they would logically fit. Naturally we have been and will continue to be vitally concerned in

roads improvement, and, of course, we appreciate thoroughly that any comprehensive defense scheme must include substantial attention to highways, in connecting up main arteries and providing for coastal and border avenues of communication. I have asked President H. M. Rowe of the national body to add to the Military Preparedness Committee not only Chairman George C. Diehl of the Good Roads Board, but all members of the Executive Board, as these men are scattered over the country and can assume much of the work in their respective vicinities."

## An Independent Association Movement.

Garagemen and dealers may as well make up their minds first as last that any organization movement calculated to benefit retailers must be supported by retailers and not financed by outside interests.

Garagemen, auto dealers, repairers, welders, vulcanizers and supply men should join the A. A. G. O., pay their dues and make the organization a powerful instrument with which to fight their battles.

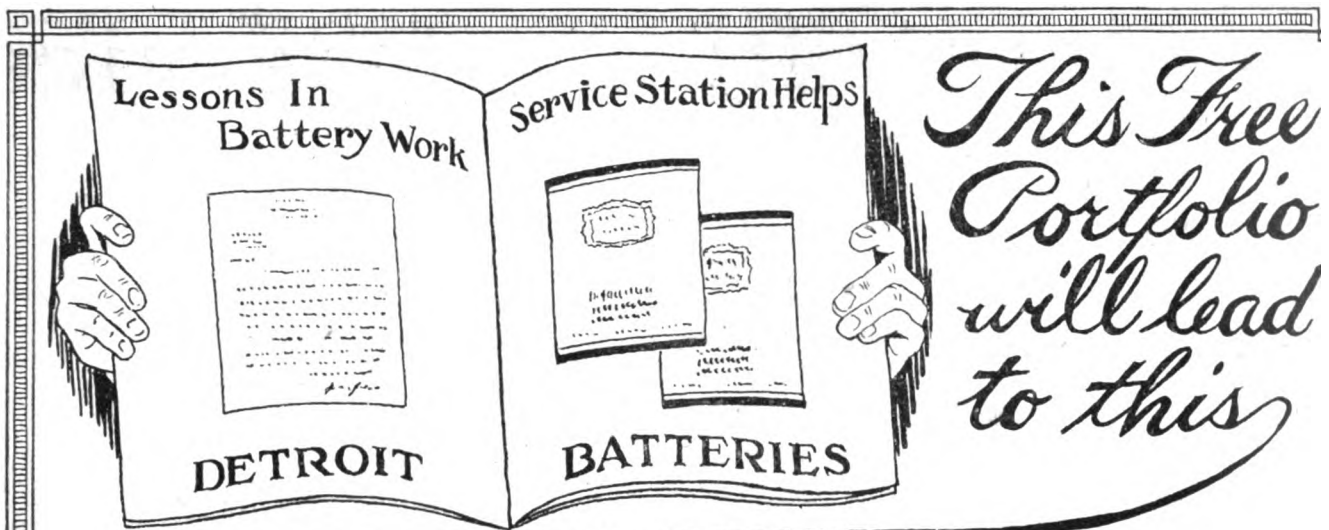
Thus far not a dollar has been received from manufacturers, jobbers, insurance concerns or other interests whose motives can be questioned, whereas every dollar expended in behalf of A. A. G. O. activities has come to it through membership dues, legitimate income from its official journal and funds advanced by national officers whose hearts are in the work of obtaining better and more profitable conditions for the craft.

Associations with a mixed membership have never been militantly successful in protective and creative work. They breed a cross-firing of purposes which results in much talk and no action.

It is up to the garagemen and dealers of the country to say how strong their association shall be and the A. A. G. O. officers can guarantee results commensurate with this strength. This association's record is phenomenal—12,000 members in a little over one year tells the tale. We only need more members paying the increased dues of \$4.00 a year to make this association one of the most powerful in America.

### Cultivate Your Jobber.

The accessory jobber can be of great service to the garageman and dealer if he is properly cultivated. He is a mine of information and, being intensely human, he responds to evidences of co-operative goodwill. He can put the retailer next to many good things in the way of purchases, merchandise information, etc. It is a pretty good idea to stand in with your jobber when the economics of the situation will permit it. However, refrain from anything that looks like subservience and always impress upon the jobber the fact that you are an independent business man and are beholden to no one.



Do you realize that there are just two thing on a motor car that wear out and must be replaced time and time again—tires and batteries? These are the only two accessories which insure a steady, permanent resale business for the dealer who handles them.

The dealer who enters the battery business today, steps in just at the beginning of its greatest growth. The business will be trebled within the next three years.

This portfolio will explain how easily the Detroit Battery Company has made entering the battery business for the dealer who can measure up to their standards.

This portfolio will show you how we have taken all the mystery out of the business—how we even give a free course of instruction in practical battery work to our own service station men—how we help them get business—show them how to advertise, and how to treat their customers. The portfolio shows actual samples of the various service station helps—literature, signs, etc. It shows the office system which we have devised for our service stations.

And it will also contain a personally dictated proposition, showing you just what it will cost you to get into the battery business, what equipment is required—what our proposition to you would be and the probable profits you could expect in your particular territory.

And it will describe Detroit Batteries which will be the foundation and a mighty safe, sound foundation for the business. It will show how they have been made the longest lived, most powerful batteries on the market.

As a wide awake dealer you ought to know the possibilities in the battery business.

You ought to have this portfolio right now.

It won't cost you a cent. Just fill out this coupon and mail it today.

## DETROIT BATTERIES

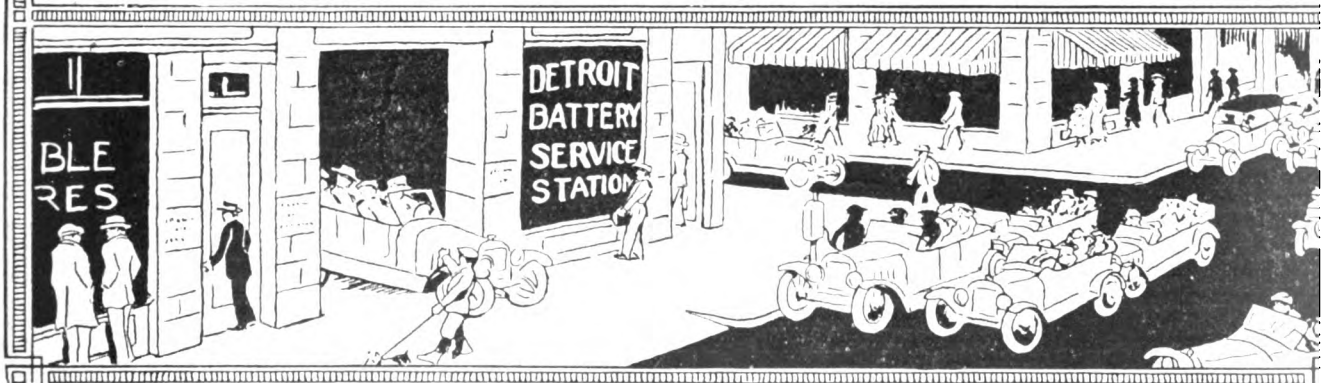
**Detroit Battery Company**  
**DETROIT, U. S. A.**

DETROIT BATTERY CO.,  
108 E. High Street, Detroit, Mich.

Send me the portfolio.

Name .....

Address .....





# Standardization of Service

As a Feature of Association Work the A. A. G. O.  
Shows Great Wisdom—Association Emblem Should  
Be Made to Mean Best of Service and a Square Deal

By R. WHITELY PLUMMER

Assistant to President, Spring Nut Lock Company, Chicago

From an address delivered before the Second Annual Convention of the  
American Association of Garage Owners at the Auditorium Hotel, Chicago

**N**O permanent success in business can be built upon any other foundation than that of service. The degree of service rendered is the measure of the degree of the success of that business. This is a fundamental business axiom that applies alike to any business, whether it be in running a garage, a bank, or a farm. Build the fire of Service under the pot of your business and you will cook the toothsome morsels that are satisfying to your appetite.

Although I have never conducted a garage, I have had many occasions to patronize such, and I realize, as does every other person who comes in contact with these valuable institutions what a difference there may be in the quality, quantity and method of rendering of garage service. Furthermore, as I have two sons who are actively engaged in the garage business, and who are members of this Association, I can speak with a certain degree of authority of the service the garage owner may render his patrons, and of the great and increasing rewards he may gain by the improvement of that service.

#### Relation of Garageman to Customer.

You stand to your customers in exactly the same relation that a doctor does to his patients. You are a necessity and it is up to you to so conduct your business that you will no longer be regarded as a necessary evil.

Time was when the so-called joke-smiths of the popular press aimed their shafts equally at the early repair man of the automobile business and the plumber. While the jack-of-all-trades who repaired the early automobiles was the antecedent of the modern garage owner, his type is practically extinct, and compares about as closely with the modern garage man as the ape of the African jungle with his present day prototype—man.

By following the idea of service the manufacturer has so improved the automobile that what was but a few years ago a rich man's luxury has become every man's necessity. Service has built the whole motor industry. As the designer and manufacturer have studied and labored to simplify their cars, so the progressive garage man has studied how to simplify and make more efficient his business of keeping those cars in running order.

As the manufacturer has been progressively educating the great mass of the people in caring for his car, the garage owner has in turn taken up his educational work, and in my opinion the garage man has done more free work, the influence of which has been felt upon the whole automobile industry, than in any other single class whose living is derived therefrom.

#### The Care of a Wonderful Power Plant.

The ordinary man who buys an automobile assumes the care of a complete power plant more wonderful in the mechanical principles it employs than almost any stationary power plant of many times the horse power. When he gets in difficulty it is the garageman who

#### This Address Made Big Hit.

While Mr. Plummer's address was delivered without notes, the following extracts cover the more important points as he made them in his talk. Mr. Plummer's ideas were so well received that many big men in the motor trade took occasion to compliment him and he was called upon to respond to a toast at the banquet of the Association held at the Auditorium Hotel the following evening.—Editor.

helps him out, and he teaches him how to avoid that difficulty again. This is service of the highest type and unusually freely given.

High as are the standards of the average garage owner, when an association like the American Association of Garage Owners is formed it is bound to include not only those who render this high type of service but those who have not yet learned the principles of modern business.

Therefore I will speak of a few things which no doubt a majority of you know, believe in and practice, but which it is up to you to see that all members of this association make a part of their business creed.

Watch your employees and see that they are courteous. Many a good customer has been lost by discourtesy on the part of employees about which no complaint has been made, and yet which oft-times has driven the customer to take his business elsewhere. It is difficult for an owner to know of these little things that hurt his own business, and through his business hurt the business of every other member of this Association. This is so important a point that in large department stores it is common practice to employ shoppers to shop in the store of their employment as outsiders would do, testing and reporting upon the matter of courtesy under difficult conditions.

#### More Than a Mere Repair Man.

Another point of your business is the supplies you carry. The garageman has long since graduated from being merely a repair man. He is called upon to carry in stock and be ready to supply at an instant's notice almost every conceivable need of the automobilist. This makes him a merchant and as a merchant he is amenable to the laws of merchandising. Modern merchandising has become an inextricable part of modern advertising. It is a well known fact that nationally advertised goods may be sold more quickly and with greater satisfaction to the consumer than unadvertised goods. This has been tested out time and again in stores of all kinds.

The consumer who gets a tire or any part

of an automobile, or the oil or gasoline for his motor, is more quickly sold and more permanently satisfied if he is supplied with an article with the merits of which he has been previously acquainted through publicity. You can rely on the satisfaction that well advertised goods give, and even though the immediate profit may not be quite so large, the ultimate profit will be infinitely greater.

Living Advertisements Boost the Association.

Then so conduct your business that when a machine leaves your door the owner is so satisfied that he is a living advertisement constantly boosting you and your Association. This may seem a difficult standard to live up to, but remember that in many other lines of business equally as difficult such a standard has built success. No greater truth was ever spoken than that embodied in the motto: "The best advertisement is the wagging tongue of the satisfied customer."

This brings us to the second factor of success—making your service known. For if your service be right, and it be known among men, the success of your business is sure. And that brings us around again to the subject of advertising.

There are two classes of customers that come to every garage, the car owners in your own territory and the transients. The service you have rendered and the advertising you may have done, have built your business among the owners in your own town or city.

#### Collective Building.

But how can you profitably build an increasing business from the transient trade? The greatest possible lever for building this transient business is placed in your hands through the formation of this Association, the American Association of Garage Owners. What would have been difficult, if not impossible to do individually, can be cheaply and profitably done collectively.

You stand in relation to the motor car owner much the same as the proprietor of a hotel does to the public generally. Where a few years ago the majority of the garage business was done for people within a radius of a few miles, the constantly increasing long-distance travel by automobile is changing the balance of trade for the garageman from the local field to the national field. This change will continue in progressive ratio as the years go by.

While it is possible for the owner of the great city hotel or of a chain of such hotels to advertise nationally and so make known to practically all the traveling public the advantages of the service he renders, it will be a long time before such national advertising could be made profitable for even the largest garage owner. But as members of this Association you have it in your power to establish a standard of service which shall be equally high from Maine to Texas and from Florida to Washington.

This means that wherever the sign of the American Association of Garage Owners is hung out, every car operator may know that



# HONESTY

**T**HE success of the Dearborn One-Ton Truck Unit is built upon honesty—honesty in design, honesty in materials, honesty in construction, honesty in advertising, honesty in selling. The results of this honest policy under which the Dearborn is made are found in the big, sound, growing, money-making businesses which Dearborn Dealers have established.

The field for the Dearborn Unit has hardly been scratched—it is practically unlimited. In *your* town and territory there are many *sure* prospects for the Dearborn. General merchants, expressmen, lumber dealers, farmers, dairymen, truck gardeners, manufacturers, contractors, etc.—these people need the Dearborn and will buy it. Almost without exception they are people who wouldn't think of paying \$1500 for a truck (the average price of a one-ton truck), but they are interested in the Dearborn Truck because it can be obtained for \$350 and a Ford chassis, and will give them just as strong and dependable a one-ton truck, which they can operate at less expense than a horse and wagon.

**\$350 and a Ford, New or Old, Make a**

## FORD- DEARBORN One Ton Truck

The Dearborn Unit is as well and carefully made as any truck chassis on the market. It is manufactured in our own plant and we guarantee it to be right. It is a simple matter—the work of only a few hours—for an automechanic to attach the Dearborn Unit to a Ford chassis. 90% of load is carried on sturdy rear axle and heavy truck wheels. Full 9-ft. loading space; heavy artillery type wheels with guaranteed hickory spokes and felloes; solid rubber tires.

Standard tread, same as Ford front wheels. Baldwin roller chains and Baldwin steel sprockets. First quality materials used throughout. Remember this: The Dearborn Truck Company is *not* a stock-selling organization. It is a real manufacturing company with a big, modern factory, making carload shipments daily.

Write today for the Dearborn Dealers' Proposition.

**Dearborn Truck Company, 1228-64 S. Campbell Ave., Chicago, Ill.**

he can absolutely rely upon prompt and courteous service, fair and square treatment, and the skilled supply of his needs. Make this sign a banner that means the BEST. Take for your motto "One for all and all for one."

#### Looks for the Sign.

Then when the customer has experienced the service of this Association in his home town, and starts out on a tour, he will look for the sign of this Association all the way across the country. Thus the service rendered by a Massachusetts garage is a living advertisement for every other garage in the country. The satisfaction he gives will be reaped by his brother in California and vice versa.

With such a standard of service, and as an Association, you can advertise—advertise nationally. Real service, high standards of salesmanship, of management and of quality of the goods you sell can and will invariably return ample profits for money spent in publicity. No other kind of advertising can hope to pay in the long run.

So I will suggest to you that you have the sign of your Association permanently displayed on every sign board; have it hung out in your garage; have it shown in your windows, printed on your stationery and all your bills, and back it and talk it whenever you possibly can. This is the advertising that begins at home.

#### An Advertising Appropriation.

Then I would suggest that you formulate some kind of a national campaign. I will not attempt here to tell you how to conduct such a campaign, as such a plan would be the outgrowth of much careful study and gathering of data under expert advice. But I do advocate that plans be laid by which an appropriation for such advertising could be raised. [This will be done by the A. A. G. O. when it becomes stronger financially, and this is up to the garagemen of the country.—Ed.] You are all more or less familiar with the great Association campaigns that are now running throughout the country. While I have yet to hear of a single instance of association advertising failing, it is well known that campaigns on such food products as raisins, oranges and even milk, have been the most successful from every point of view of any that have ever been conducted.

Remember, advertising is a legitimate expense of every business. The expenses of an Association campaign should be borne by every member in proportion to his business, and looked upon by the individual garageman just the same as fire insurance, for which he expects to receive full value for his money. There are plenty of competent men who could be employed and directed by your secretary to plan the expenditure of such an appropriation when the same is raised. It will undoubtedly be found that each of the several classes of media should receive a share of this appropriation.

#### Trade Journals Build Auto Trade Prosperity.

I want to say a word, though, for the trade

journals which have so loyally and continuously helped build the prosperity of the automobile industry.

As you will see by referring to the program, I am connected with the Spring Nut Lock Company. No, I am not selling Spring Nut Locks, nor am I going to explain to you anything about the device. You can get all the information you desire, regarding these, from the pages of the various automobile journals in which the Lock has been extensively advertised. I am merely referring to this to emphasize one of the points I want to make and to which I wish to draw your particular attention.

During the past three months, we have contracted for upwards of ten thousand dollars worth of space in the various trade journals,

reaching the automobile and other allied industries and as a result of the advertisements, that have already appeared, have received inquiries from practically every civilized country in the world with the exception of the Central Powers, from whom, of course, no mail is reaching this country. From England, France, New Zealand, Australia, India, Russia, far-away Baluchistan, and coming nearer home, Cuba, South and Central Americas and Canada.

#### A. A. G. O. a Natural Vehicle for Co-operation.

So speaking from my own experience in my own company and from a broad experience as the executive officer

of a national advertising agency I say the best place to start your advertising campaign is in the trade journal field. Co-operation is the order of the day, and the survival of American prosperity is dependent upon the degree in which American business men co-operate. Your Association is the natural vehicle for the co-operation of your great and growing industry. Support it, raise its standards, hold up the aims of its officers and—advertise.

Auto dealers and garagemen at Pine Bluff, Ark., have served notice upon the motoring public that hereafter a nominal charge will be made for the delivery of gasoline and oil to customers of garages, owing to the narrow margin and profit on these commodities.

Trade-mark your garage and make the trade-mark mean excellence and integrity. It sort of visualizes your business and its policy. Use a copy-righted symbol of some kind and it can be made to tell a long story at a single glance.

Time tangoes on, and if you are to get your share of the bunny hugs, you've got to keep step with the merchandise and service music.

#### The Power Behind the Member.

National Secretary Carr receives many complaints from members of the association directed against manufacturers and jobbers whose business methods are either careless or dishonest. In some cases the fault lies with the rapid growth in the business of the concern complained of and the inadequacy of its machinery to take care of the increased trade.

These complaints always state that letters are not answered and that nothing is being done to ship goods or return money paid. In some cases the deposit proposition figures prominently. Some firms regard deposit money as their own and are loath to part with it.

The benefit of organization is very effectively shown when a letter from the National Secretary brings an immediate reply and an early adjustment, including money refund, whereas individual letters from garagemen and dealers are ignored or bring flat refusals to do the right thing.

The Ft. Branch Auto Co., Ft. Branch, Ind., write, under date of March 8th: "We are this morning in receipt of check for \$40.00 from — Co., in full of the refund due us. It is evident that the sending of this check is due to nothing else than the effort you put forth in our behalf. To say that we appreciate your efforts and success is only putting it mildly, as we know that we could not have collected this amount."

Logan Fisher, Fennimore, Wis., under date of March 13th, writes: "We have received \$70.00 check in adjustment of our matter with the — Co., and appreciate very much what the A. A. G. O. has done for us. This shows the value of organization."

The Hawes S. F. Co., Coldwater, Mich., under date of March 18th, writes: "We have received check in full from the — Motor Supply Co. for the money which we have been out of the use of for some months past. Thank you very much for the assistance given us."

#### Getting the Money for the Boys.

The M. S. Madison Garage, Unity, Wis., find the A. A. G. O. collection service most efficient. They write: "It will not be necessary for you to send any more letters to —, as he has settled his bill in full."

E. Koontz Sons, Leesburg, Ind., write: "Our bill against — for \$40.00 has been paid, so please discontinue service to him."

Birmingham Welding Co., Birmingham, Ala., write "Discontinue service on —, as they have paid their bill, \$25.45, in full. Many thanks."

A. W. Kear & Sons, Vernon, Mich., "The \$13.70 owing us by — has been paid in full as the result of your collection work."



Mr. R. W. Plummer.



## How Do You Know

a good lubricant from an inferior, non-durable oil which "gums up"? Certainly not by appearance.

Be guided by the experience of 450,000 motorists and the recommendation of the Standard Oil Company.

## Use **Polarine**

FRICION REDUCING MOTOR OIL

Add power and life to your motor. Do away with the exasperating and expensive experience of scored cylinders, excessive carbon, jerky power and repair expense.

Polarine flows freely at zero.  
and maintains the correct  
lubricating body at any motor  
speed or temperature.

It is produced scientifically by acknowledged authorities on lubricants.

With huge research laboratories and every facility, they are unable to improve Polarine. Yet it costs no more than inferior lubricating oils.

Order a half barrel today, and cut down your up-keep.

**Standard Oil Company (Indiana) Chicago, U. S. A.**

**Use Red Crown Gasoline and get more power, more speed, more miles per gallon**

16a



(Continued from page 25.)

is calculated to prevent disputes and to speed up liberal payments on account.

But, to my mind, the major function of this new credit-file is to compel the filing of all charge and C. O. D. slips in a safe place where they cannot be mislaid, altered or destroyed.

#### Prime Causes of Failure.

My experience as a banker and public accountant convince me that 50 per cent of the merchants who fail, fail through extending more credit than their capital warrants.

They are blindly ignorant of the fact that far too many of their charge customers are not worthy of the credit extended. Careless habits of bookkeeping and filing are fatal to any business.

It is true, also, that most merchants get into deep water because they don't realize how much outstanding credit business they have upon their books until it is too late to save themselves.

This new credit file not only tells them the general condition of their credit business but the actual status of each charge or C. O. D. account, as well as the amounts paid on account each day by each customer.

Its general adoption will greatly reduce the percentage of failure of retail merchants and small manufacturers.

#### Good Chances for Good Men.

Men equipped with practical, technical knowledge of mechanics, plus executive capacity, have increasingly attractive opportunities open to them in the field of automobile service, according to C. R. Lester, head of the technical service department of the Packard Motor Car Company. Some of the positions waiting for men of the right qualifications, Mr. Lester said, pay \$4,000 a year and upward.

"The experience and the ability in greatest demand in automobile technical service are not those gained or shown in ordinary mechanical work," said Mr. Lester. "I have in mind the demand for high-grade superintendents of service organizations, for well-educated, thoroughly-trained men capable on the one hand of directing an organization of 100 to 600 mechanics, and on the other of giving informed, experienced attention to a detail of a mechanical job.

"The Packard company is very much interested in men of this calibre. We have an established course for the training of prospective superintendents in the principles and technique of Packard service, and whenever the right man applies we generally have a place for him in this course.

"The automobile service field is rapidly growing up to the proportions of the automobile manufacturing industry itself, and in some particulars indeed is surpassing the parent industry. Service always has been the basic factor of car operating, and now it is recognized as fundamental in car selling.

# Grit Builds Big Business

**In a Little Town from Small Beginnings — Curbstone Salesman Once, Now Successful Garageman and Dealer—**

**T**HERE are a great many successful garages in the United States, but this is the story of a little garage in a little town that has made a big success.

For seventeen years a machinist worked in the locomotive department of the C. B. & Q. railroad at Burlington, Iowa. He was a good machinist—steady, reliable and industrious, and performed his tasks faithfully day after day.

#### The Start.

In 1912 he decided that he would like to sell automobiles and ultimately have a garage of his own, and so Ed. Rheinschmidt

and this purchaser allowed him to use this car for demonstrator.

#### Manufacturers Lend Helping Hand.

About this time the Bartholomew Co., manufacturers of the Glide Six, for which Ed. had the agency, learned of his trouble and made a liberal arrangement with him which made it unnecessary to use his customers' cars for demonstrating. From that time sales were made rapidly and in a short period he sold 75 Glide cars near Burlington.

Last year Ed. built a well equipped garage and become a real automobile dealer



gave up his job and started in the automobile business. He had but little money—not enough to buy his first demonstrator, but he borrowed enough from a friend to buy his first car and opened up his salesrooms in an old blacksmith shop in West Burlington. Of course his competitors laughed, and called him a "curbstone" dealer, but Ed. went right ahead.

And then—before he had sold his first car sorrow visited his home and he lost two of his three sons. A little later his wife followed, leaving him alone with his little boy. The outlook was black and it seemed as if he did not have a friend in the world.

One day he was walking down the street with bowed head and sad heart, when a man stopped him and said: "Ed., I would like to buy your demonstrator; perhaps you need the money." And so he sold his first demonstrator and with the proceeds bought another. Soon he sold this also, and the kind hearted purchaser allowed him to keep the car for two weeks and use it as a demonstrator. Then he made another sale

with ample garage facilities. He sold ten more cars than he could deliver.

When asked the secret of his success—Mr. Rheinschmidt said: "My customers like the car I sell because they believe it is the best car built for the money, and then I am a good mechanic and keep the cars I sell in good condition."

Most of Ed.'s customers are farmers and he never passes the place of a farmer to whom he has sold a car without stopping in to look it over and see if it is all right.

#### Has the People's Confidence.

Ed. rarely loses a sale because people believe in him, trust him, and know that he is a good mechanic. Recently, he took eight prospects to the Glide company's factory to see how the car he sells is made and every one of them bought a car.

The curbstone dealer has succeeded and built his garage by sheer grit and determination.

We are sure that our readers will be interested in the picture of Ed. and his little boy and the garage that grit built, which is shown herewith.



## The BIGGEST Manufacturer in the Motor Truck Industry—the GREATEST Sales Possibilities—the BROADEST Dealer Co-operation

**One Every Four Minutes**

**Deliveries Guaranteed**

**13,500 Already Delivered**

**Smith  
Form-a-Truck**

**\$350**

f. o. b. Chicago

**T**HE huge Smith Form-a-Truck factory is now turning out one Smith Form-a-Truck every four minutes. Work is being rushed to complete a second factory to double even this tremendous output. Over 1,600 Smith Form-a-Trucks were sold in January. February exceeded January by a large percentage.

13,500 Smith Form-a-Trucks are now in service in all parts of the country, in over 500 lines of business.

The Smith Form-a-Truck dealer organization is the third largest selling either pleasure cars or motor trucks.

Smith Form-a-Truck has already sold more than all other truck attachments combined or any other motor truck in a given time.

The Smith Form-a-Truck advertising and selling campaign is the biggest by far ever back of any dealer in motor trucks.

At the New York Automobile Show—at the Chicago Automobile Show—and all the big shows throughout the country, Smith Form-a-Truck was the one selling sensation. Dealer contracts—orders from purchasers—were stupendous. Smith Form-a-Trucks are being bought by users up to fleet equipment totalling several hundred on single orders.

Smith Form-a-Truck is your big opportunity if your territory is not already gone. If it is open, a wire from you is absolutely necessary to insure your consideration. Territory is being taken up so fast that we cannot promise anything to anyone.

Materials are on hand for 30,000 Smith Form-a-Trucks and we are anticipating demands for future big production a year in advance. You can get deliveries to satisfy your customers in any quantity. This we guarantee you. It is the only way you can do a successful business.

Tie up with Smith Form-a-Truck now, if it is not too late. Find out for yourself whether your territory is closed. Get in on the biggest selling success of the automobile or motor truck industry.

## Smith Motor Truck Corporation

Manufacturers of Smith Form-a-Trucks

Executive Offices and Salesroom, Suite 984, Smith Form-a-Truck Building

**1470 Michigan Blvd., Chicago**

Eastern Branch  
1834 Broadway, New York

Kansas City Branch  
1808 Grand Avenue

Pacific Coast Branch  
Pico and Hill Sts., Los Angeles

Southern Branch  
120 Mariette St., Atlanta

# Detroit Truck Co.'s Tonford Unit

**F**RED PATERSON, the thirty-year-old president and founder of the Detroit Truck Company, Detroit, is a live wire in several lines of business. His success with the Tonford truck unit is such, however, that it has become the measure of his reputation in the automobile business.

Associated with Mr. Paterson as his most reliable lieutenants are General Manager John L. Wierengo and General Sales Manager Ralph Sparling, to both of whom Mr. Paterson attributes a full share in the success of the company. Tonford agencies have been established at many points in the South, Middle West and East, and large numbers have been sold in England, Norway, Sweden and South America. Africa and other foreign lands will be invaded this year with selling campaigns.

## Features of Tonford Unit.

The Tonford unit consists essentially of a dead rear axle on which a pair of heavy wheels are mounted, a pair of springs and a pair of radius rods, and a frame that is combined with that of the Ford chassis. The rear axle of the chassis is converted to a jackshaft through which the vehicle is driven by sprockets and chains extending to each of the rear wheels. Of course there is a practical braking system. The idea of the unit is simple enough, but what required great care in developing a design was to afford ample strength with minimum weight, to eliminate every part possible to obtain simplicity and accessibility, to have the moving parts practically protected and to insure sufficient lubrication. This development necessitated experimental work of a very general character, for the desire was that the units should be so built that they would endure in every service in which they could be used.

## Conversion a Quick and Easy Work.

The preparation of the Ford chassis is a work that can be accomplished very easily. Four holes are drilled in the frame into which are fitted the bolts that complete the assembly, and when these have been seated the rear axle is quickly converted into a jackshaft and this is installed in the brackets and the sprocket adjusted. The chains are next put on and the radius rods coupled, and the work is complete.

The frame is constructed of two side, rear-end and two cross members, that are

of heavy pressed steel channel section with wide webs to insure strength. The forward ends of the side members are "necked" or curved inward, the frame being wider than that of the Ford chassis, and the ends

frame, which is cambered, and there is in effect two cross members, and a double frame from this point forward to the dash. The spring hangers are heavy and are riveted to the frame members, the cross

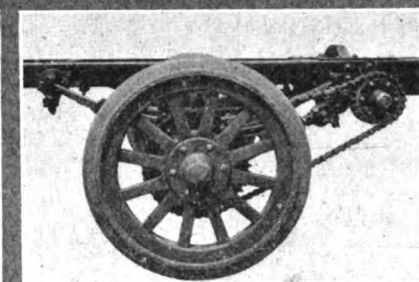
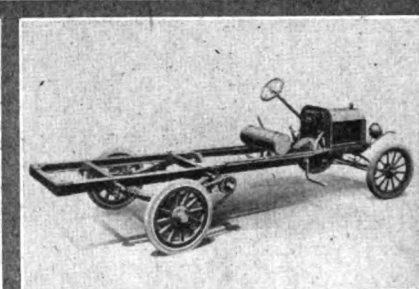
members affording secure anchorage and insuring against twisting or distortion. There is need of this rigidity, for the springs are shackled at both ends and there are necessarily stresses at every deflection and reflexion on the springs.

The jackshaft is the original Ford rear axle with the wheels removed from the driving shafts. On the taper ends of the shafts sprockets are keyed and secured by locked nuts, and the housing ends are rigidly clamped in brackets, the upper sections of which are bolted to the unit frame side members under the original rear end frame member of the Ford chassis. The lower sections are secured by locked nuts and may be removed quickly whenever necessary. This manner of installing the jackshaft also greatly stiffens the frame at this point. The brake flanges or spiders are retained on the axle housing and the sprockets are built with hubs on which the toothed members are bolted. The toothed members can be renewed whenever worn.

The units are built so that when assembled the chassis will have a wheelbase of 127 inches, or twenty-seven more than the original Ford machine, and it may have rear tread of fifty-six or sixty-four inches. The rear axle is a steel drop forging that is  $2\frac{1}{2}$  inches square and is guaranteed to endure a load of 3,000 pounds in any operating condition. On this the 12-spoked wooden artillery type wheels are mounted on Bower roller bearings, the bearings being designed to sustain loads of 7,500 pounds, so that there is a factor of safety that will never be reached. The unit is designed to carry ninety per cent. of the load, and with a normal freight of a ton the total weight on the rear axle would be 1,800 pounds.

## Radius Rods Take the Stresses.

The rear axle carries the rear ends of the radius rods, which are rotatable on seats, and the forward ends are secured to the jackshaft and are pivoted so that there is practically universal action. These rods take the driving and torsion stresses. The rear wheels are shod with solid tires. The rear wheels are driven by standard type block and roller chains that are designed for vehicle propulsion. The rear wheels



Left—President Fred Paterson, Detroit Truck Co.

Right—General Manager John L. Wierengo.

Center—Tonford Unit, Jackshaft and Completed Truck.

are formed so that the side members of the Ford chassis frame may be telescoped through the channels to the dash. The ends are secured by bolts to the Ford frame, the frames reinforcing each other. The two cross members of the frame are fitted to reinforce it at the spring hangers, and these and the end members are strengthened by heavy gusset plates.

## Retained By Two Heavy Plates.

The rear end of the Ford frame extends nearly to the forward cross member, and two rectangular plates that are riveted to the unit frame and the cross member are bolted to it, so that the assembly is extremely solid and substantial. Between the plates is the rear member of the Ford

# ROMORT AUTOMATIC AIR VALVES

## The Service Station's Friend

Style A



List Price \$3.00

hard, rough usage. Air is released only when the Valve is pressed on to the tire. Equipped with the famous Romort Pump Connection Rubber.

Style A Description

A guaranteed device that has no equal for free air stations. Will withstand any rough or hard usage and abuse. Recommended for any free air station or air storage plant, repair shop or any station that is subjected to

Style B Description

The Style B Automatic Air Valve is recommended to free air stations requiring a small and inexpensive air device. Stem fits any sized tubing, automatic in opening and closing, and guaranteed air-tight. We strongly

Style B



List Price \$1.00

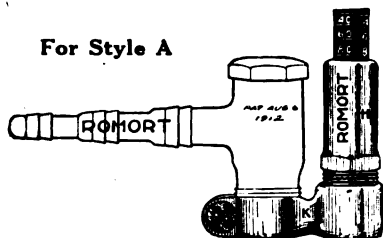
recommend this Valve for private or public garages, vulcanizers, tire repair shops, etc. Equipped with Romort Pump Connection Rubber.

## ROMORT TIRE TESTER ATTACHMENT

A Garage Necessity

List Price \$1.50

For Style A

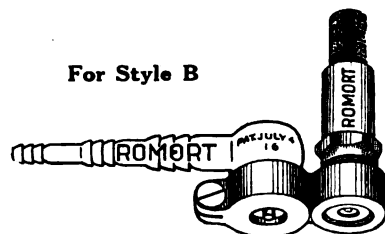


A device for attaching your gauge to either Style A or Style B Air Valves, and gives the service station a permanent holder for its gauge, ready for instant use by the public. Simply screw your gauge onto the holder and you have a tire tester and tire inflator combined in one, and the old trouble of losing gauge is forever over. We sell only the holder attachment. Every garage with free air should be equipped with the Romort Tire Tester Attachment.

Caution.—When ordering, state whether for Style A or Style B Valve.

For Sale by All Jobbers

For Style B



**ROMORT MANUFACTURING CO., Seattle—Chicago**

## Did Samson Have a "Hump-Back" Mr. Repairman and Dealer?

Don't go wrong on your spring replacements.

Springs that are "humped-back" will *not* insure you against spring troubles forever.

### REASON IT OUT YOURSELVES

You want flexible, easy-riding, quality springs, and springs with "true lines" in keeping with the rest of the car.

*These qualifications are found in*

## HIGGINS QUALITY SPRINGS

### FOR REPLACEMENTS



No "HUMP" Here

Made without center bolt—*boliless*—*strongest* where the greatest *stress* is brought to bear.

Lubricated—No squeak—Life saver to tires.

No malleable attachments at center to make a *stiff* riding spring or to cause steel to check and break spring *off* center.

With Higgins Quality Springs you use the same size clips. Not necessary to throw away good clips and buy a larger size to accommodate the extra thickness of spring at center.

**Same Guarantee at Any Point on the Spring**

Ask Your Supply House for Higgins Quality Springs—if they do not handle them, write us and we will see that you are supplied. Be sure and ask for our catalog, which shows over 500 different styles and kinds of Quality Springs.

**HIGGINS SPRING & AXLE COMPANY, Racine, Wis.**



are fitted with large internal expanding brake shoes that are stated to have unusual efficiency, and these are connected with rods that are coupled with the regular Ford emergency brake. The service brake is actuated by foot pedal and the control of the machine is unchanged.

Claim is made for this unit that a pleasure car can be converted to a truck or reconverted into a pleasure car at comparatively little expense and in a short time whenever such changes are desired. In doing this work the car body is unbolted and it may be lifted and carried backward off the chassis onto horses. The rear fenders are next taken off. The frame is then jacked, the brake rods loosened at both ends and taken out of the supports or guides. Next the rear spring is unbolted from the frame and the clips are removed, the spring being taken out, leaving the rear axle and wheels clear. The wheels are then removed from the axle shafts and the axle is ready for installation as a jackshaft. When this has been done the Tonford unit may be attached in manner that has been described.

### Garage Business Good in Capital City.

By a Staff Representative.

Garagemen as a class enjoyed a good business in Washington last winter. With the reconvening of Congress the work increased, as many congressmen bring their own cars with them. One of the busy shops is the garage of H. David on G street. I called on Mr. David the other day and found him at work. He had just turned out a car for a patron and the customer opened his eyes in wonderment at the good work the garageman had done. He did not believe the job could have been done so well. I waited for Mr. David while he chatted with the car owner. I saw at a glance that he was a man fond and proud of his work. He is a man of a rugged, stocky-built type. He is not afraid of work and his appearance showed that he had been working. His face, hands and clothes bore the marks of honest toil.

When I introduced myself as the representative of the A. A. G. O., Mr. David smiled and said he was too busy to talk. "I have just turned out that car and am at work on another and business is so pressing," he pleaded against an interview. He further explained that he had been working day and night for two months and really had no views to express that would be of interest. I appreciated his situation and did not press him for an interview, but will call on Mr. David in the near future for another trial. He is a member.

# Value of a Good Start

## Springtime Hints from The KisselKar on How to Go After Business and to Keep It After You Get It

In all the big motor races, preliminary work-outs are held to determine the order of starting positions—and the driver who gets first inside place has an acknowledged advantage in the race.

There's a big advantage in a good start.

It's easier to win out when you're in the lead than to catch up when you get behind.

Enthusiasm, inspiration, optimism, self-confidence, vim, vigor and vitality are bundled up in a good start—so every man in every contest instinctively covets the lead.

While a good start usually means an early start—an early start does not necessarily mean a good one unless backed up by the "do or die" spirit of the conqueror.

There is such a thing as the habit of success. It means simply starting right and sticking until it becomes easier to stick than to stop and give up. There is nothing that is so quickly spotted by the buyer, or so highly respected in a salesman, as the success "air" which is created through an early start and a good one.

Confidence springs from knowing that you are right—knowing what you have done, how you have done it, and what you can do. Progress follows the belief that all past records can be broken by a more scientific regulation of "starts" and "speeds."

Plan your work—work your plan—keep in training—get off with the signal and make every play and every day a definite advance toward the goal.

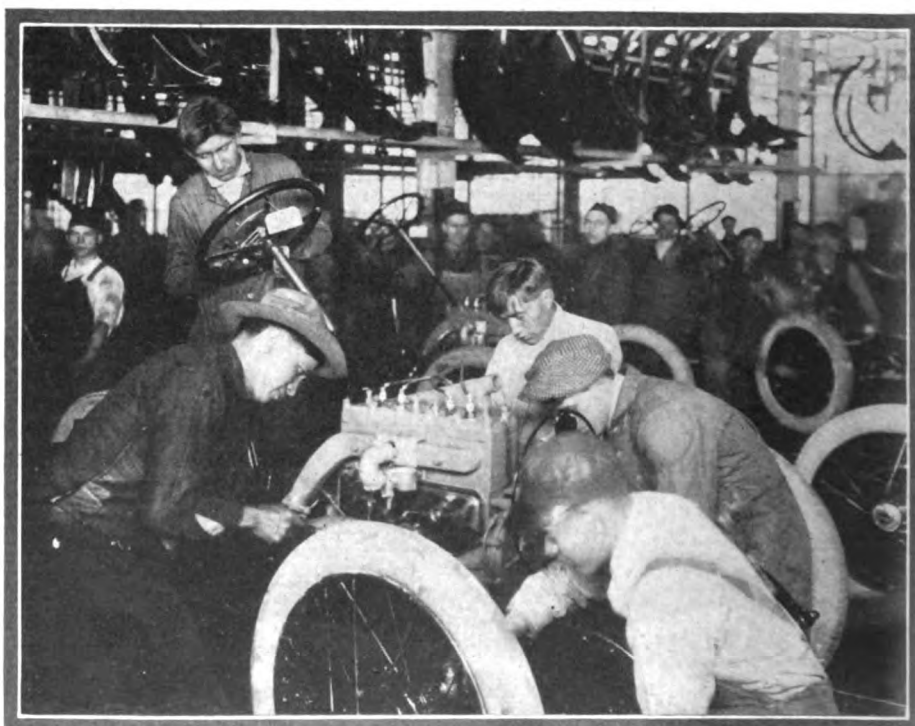
### Indians as Automobile Workers.

In the Overland factory are a score of full-blooded Indians; Chippewas, Navajos, Iroquois, Pomos, Pueblos, sent there by Uncle Sam from their western reservations to learn another of the trades of the white man.

A dozen redskins are assigned to various duties in the assembly of one of the Willys-

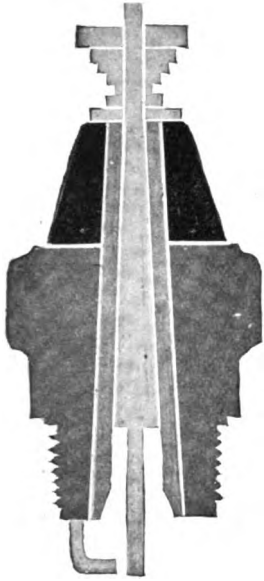
give them a general practical knowledge of motor car construction, such as is required by good mechanics, garage men and automobile repair men.

"The work of the Indians is a source of much satisfaction to us," says the foreman of their department. "The Indians we have are among our most willing, most accurate and most painstaking workmen.



Overland models. One pair aids in chassis assembly; another pair assembles wheels; five of them are engaged in final assembly; while still others work on running boards, etc. Instead of being confined permanently to one operation, they are shifted every few months from task to task, in order to

To top this off, they are very ambitious and are reading every bit of literature they can find in connection with their work, in order to acquire a better knowledge of the relation of their own particular task to the manufacture of the whole car."



## You Don't Need to Argue to Sell an Answer Spark Plug

The ideal spark plug is a mica spark plug. Experienced motorists realize this and demand such plugs.

You should show them the ANSWER Spark Plug. This is a mica plug of UNUSUAL CONSTRUCTION. Its exclusive features quickly convince any motorist of its value.

*The* **ANSWER**  
SPARK PLUG

### A Plug That You Can Talk About

It is the only plug insulated from end to end with sheets of mica. This mica is wrapped on the inside of the shell and is 3/32 of an inch thick.

Short circuiting is impossible; oil **cannot** leak through; carbon will **not** accumulate; breakage is **impossible**.

The ANSWER is a one-piece plug. It needs no gaskets or bushings to hold it together. There are no joints through which compression can leak. This feature means **more power**—always—in the engine.

Handling the ANSWER gives you a long profit—and assures the motorist of a perfect spark plug. Our definite guarantee protects you.

**GUARANTEED** to give perfect **10,000 MILES**  
service for at least

**Price \$1.00. Ford Special—75 Cents.**

*Place your order —Now—for the Spring business. Write for Discounts.*

**HILBORN COMPANY, INC., 539 Canal Street, New York City**



## Written for You

**Just Write Us Today for Your Copy**  
*The Booklet Tells:*

**Why springs break**—and why 75 out of every 100 break at the center.  
**How springs can be kept from breaking**—and how Tuthill Titanics are used for more replacements than all other makes put together. They're guaranteed *forever* against center breakage and for one year against breakage at any point.

Springs are important. Your car is no stronger, no safer than its springs. The book tells how to dodge danger, annoyance, expense. Get it. Read it.

### **TUTHILL** Lubricated **TITANIC SPRINGS**

**No Center Bolt**  
which practically cuts the spring in two at the very point where greatest strain comes.

**No Center Nib**  
where the weakening center hole in the short leaf spring is even larger than in the center bolt type.

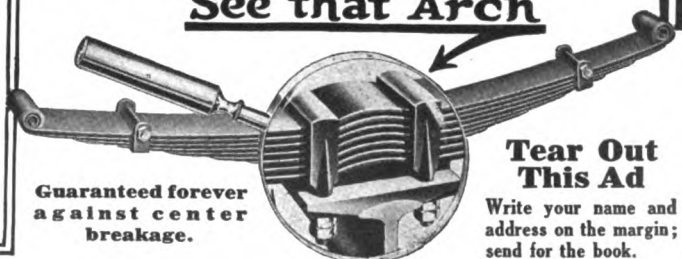
**No Center Breakage**  
for the Arch *strengthens* the spring at the center, and Titanic Springs are guaranteed forever against center breakage.

**Tuthill Spring Co., 760 Polk Street, Chicago**  
**See that Arch**

#### **Finest Possible Delivery Service**

The Tuthill Spring Co. is known as favorably for its deliveries and service as the quality of its springs. Sixty distributors. Your distributor always is ready to make immediate shipment. His orders to us are filled the same day received. OUR NEW 1917 PRICE LIST is the most complete price list of springs ever published.

Send for your copy of the booklet today



**Guaranteed forever**  
**against center**  
**breakage.**

**Tear Out**  
**This Ad**

Write your name and address on the margin; send for the book.

# Doings in The Garage and Auto Trade

## Southern States.

**Bernstein Bros.**, Shreveport, La., have begun work on their \$55,000 garage and expect to occupy it June 1. It will be 100x150 feet and, with a mezzanine floor, will have 20,000 feet of floor space. Brick and glass are about the only building materials used. It will show every garage convenience known.

**Gibson & Martin**, Ft. Gibson, Okla., will soon occupy their new garage. It will be of the best in the Ft. Gibson section.

**Westboro Auto Co.**, Tarkio, Mo., is building a large addition to its garage and will take the agency of several makes of cars.

**C. L. Seabright**, Wheeling, W. Va., is making some radical improvements in his garage.

**Givin Motor Sales Co.**, Louisville, Ky., has begun work on a new garage at Third and Market streets. The entire lot will be occupied.

**Templin, Carter & Magers**, Jasper, Mo., are the new proprietors of the Rice-Love garage.

**Carthage Auto Co.**, Carthage, Mo., is now composed of William Preston and W. J. Woods. They are practical automobile men. They will handle the Buick.

**O. B. Rogers**, Palestine, Texas, is building an \$8,000 garage. It will be one of the best in the state.

**J. A. Rowe**, Macclenny, Fla., is contemplating a new garage.

**W. O. Doughtridge**, Portsmouth, Va., is putting up a brick addition to accommodate sample cars and an accessory line.

**George W. O'Neal**, Harrison, Ark., has begun work on a new \$10,000 garage.

**P. J. Harlee**, Decatur, Ga., is completing a large brick garage. It will have every modern convenience.

**John Gunn & Son**, Benthany, Mo., are building a 48x154 brick, tile and glass front garage. Ford cars will be carried, as well as a full line of accessories.

**W. O. Scroggins**, Morrilton, Mo., has opened a new garage and salesroom in his building next to the First National Bank building.

## Western States.

**Dierk's Garage**, Ravenna, Neb., has completed a number of additions and improvements.

**Friesen & Co.**, Fairbury, Neb., have one of the neatest garages in the state. The whole building has been refinished and adequate salesrooms added for the King and Dodge cars.

**Peter James**, Spokane, Wash., has made a long-time lease of a new garage on Pacific avenue, near Walnut. He was formerly chief mechanic of the Paige and Chalmers service departments.

**M. A. Vance**, Fairbury, Neb., has opened a new garage, having resigned his position with Snyder & Friesen Auto Company.

**Twin City Automobile Co.**, Chehalis, Wash., will more than double the size of its present garage and salesrooms. The new building will be 112x136 feet and of modern construction throughout.

**H. E. Young**, Portland, Ore., is well along with the construction work on his new brick garage. He will handle the Buick.

**Rogers & Cress**, Kingman, Kans., have begun business in their new garage.

**Kretsch Auto Co.**, New Ulm, Minn., is beginning a large addition to its present building.

**Tacoma Motor Co.**, Tacoma, Wash., has leased the building at 708-12 Broadway and will rebuild it into a complete automobile building and repairing plant.

**Pendleton Cadillac Auto Co.**, Pendleton, Ore., has paid about \$20,000 for the Temple Auto Rest. A complete shop and show room will be added.

**E. P. Johnson**, Denver, Colo., has bought the interest of his partner in the West Side Garage.

**C. W. Lord**, Manhattan, Kan., is building a modern 50x150 ft. garage.

**F. W. Parrott**, Clay Center, Kan., has begun work on a new 50x90 ft. garage.

**R. L. Johnson**, Belleville, Kan., has bought the Mosher & Berry stock of supplies and accessories and has leased their garage.

**Clarence Tollefsen**, Kearney, Neb., is building a large garage at 25th street and Central avenue.

**David Fotheringham**, Pendleton, Ore., has bought the Independent Garage for \$30,000.

**Hood River Garage**, Hood River, Ore., is practically completed and is declared to be the finest garage in the state outside of Portland. It is 100 ft. square, two stories and has such modern conveniences as women's rest room and men's club room. A specialty will be turning second-hand cars into trucks. Franklin, Paige, Grant and Chevrolet cars will be carried.

**Hall-Scott Motor Co.**, Oakland, Cal., is adding two more to its present group of five buildings. Army and navy contracts for new and repair work forced the expansion.

**B. A. Packham**, San Mateo, Cal., is building a concrete and glass front garage to cost \$5,000.

**Walling & Cloy**, Payette, Idaho, are proprietors of a new \$10,000 brick garage, 60x140 ft. Said to be one of the best equipped garages in the state.

**F. B. and Chris Van Leuven**, Malron, Wash., have bought the W. F. Cody building and are transferring it into a modern garage.

**Barnes & Brooks**, Monmouth, Cal., have completed their machine shop and garage and have begun doing business.

**H. M. Fox**, Florence, Colo., has bought adjacent property and will double the size of his present garage.

**Haswell Garage**, Haswell, Colo., has been torn down to make room for a strictly modern garage building on the same site.

**Charles Van Deusen**, Tracy, Minn., has bought the interest of his partner in the Reizard & Van Deusen garage.

**North Bend Auto Co.**, North Bend, Neb., J. N. Sanchez and W. H. Snyder, proprietors, have put in a stock of accessories and will do general repair work.

**A. W. Wilson**, Hastings, Minn., is building a two-story brick, 72x140 ft., garage. Temporarily the second floor will be used for public purposes.

**Elliker Bros.**, Oxford, Neb., have bought the C. S. Prime garage.

**Hoerr & Jones Garage**, Mankato, Minn., is the new name of the Otting garage. In addition to a complete accessory line and repair shop. Hudson cars will be sold.

**Dahlen Auto Co.**, Walla Walla, Wash., has bought and is tearing down the old Northern Pacific depot. The company will put up a \$35,000 garage and general purpose building to be largely used for its Ford agency.

**Roy Tonkinson**, Kearney, Neb., has built up a large garage business, starting with nothing four years ago. He has formed a

partnership with Lou Hayward and took on Paige and Republic truck agencies.

**R. E. Snell**, Pine River, Minn., has bought the Motor Inn garage of E. E. Iverson.

**Sipple Bros.**, Hastings, Neb., have leased the three story, 66x125 ft., \$50,000 garage building now under construction by the Kerr estate.

**Frank W. Hansen**, Fresno, Cal., will soon be doing business in his new Merced street garage.

**Sidney Motor Co.**, Sidney, Neb., is the new name of the former Ford garage. R. H. Rogers and H. B. Sweet of Denver are the new proprietors and will continue the business. O. R. Owens, former proprietor, has taken a farm truck agency.

**Brewer Garage**, Sidney, Neb., has been forced by increased business to begin work on material additions to its building.

**Dan Baker**, Junction City, Kans., has bought the interest of his partner, Harry Schoepf, in the Independent garage.

**W. T. Jones and A. E. Freeman**, Collinsville, Okla., have leased the newly completed garage on Ninth and Main and begun business.

**Snider & McGregor**, Belleville, Kans., are pushing the work on their new garage.

**Tony North**, Cokeville, Wyo., will be in charge of the new garage in the Stiner Bros. warehouse.

**Sherman Hayes**, Eugene, Ore., agent for Overland and Hudson cars, is hastening construction work on his new garage.

**John F. Imgrund**, Brainerd, Minn., is in active charge of the new garage and repair shop just completed by his father, J. T. Imgrund.

## Middle States.

**Ray & Son**, Gellam, Ill., will soon occupy their nearly completed garage.

**Gwyn Motor Sales Co.**, New Albany, Ind., has bought a two-story brick business block and is changing it into an up-to-date garage.

**Modern Motor Co.**, Milwaukee, Wis., is putting up a 45x125 concrete and steel addition to its present building.

**Wayne County Auto Co.**, Corydon, Iowa, is moving into its handsome new garage.

**Monroe Ave. Storage and Service Garage**, Grand Rapids, Mich., E. E. Shackleton, proprietor, is nearly completed. It is 50x100, semi-fireproof, brick and glass front and asbestos roof. It will be steam heated and gives room for storage, accessory and salesroom.

**Mason Garage Co.**, Davenport, Iowa, is doing business in its new garage. Aside from regular garage, accessory and repair departments, Pierce-Arrow, Jordan and Dodge cars will be sold.

**George Ott**, Wheatland, Iowa, of Kietling & Ott, has bought the Fred Rowland garage and implement building and will materially add to the garage facilities.

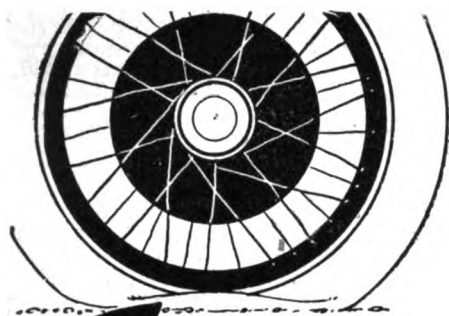
**Modern Garage Co.**, Iola, Wis., has bought the Hanson building and is spending \$15,000 to make it an up-to-date garage. It is the same ownership as the Modern Garage of Waupaca.

**Highland Barnes**, Arbor Hill, Iowa, has completed his new garage.

**J. H. Lane**, Woodland, Iowa, is opening a new garage and repair shop.

**Ray Reece**, Union, Iowa, has bought the Watson buggy repository and is converting it into a garage.

**Dr. Geo. W. Anderson**, Bealecenter, Ohio, has bought the Oliphant garage. It will be operated by Frank Black and George Zapp



*This  
Never  
Happens!*

## To a Tire That is Filled with **National Rubber Tirefiller**

### Because:—

These rubber sections laid end on end in the shoe take the place of an air-filled rubber tube—a perfect substitute with several times more efficiency, firm, resilient, never blows out, no punctures and longer lasting tire.

### Dealers:—

Motorists are beginning to realize the value of National Rubber Tirefiller and are using it with surprising results. Write for our agency plan.

**NATIONAL RUBBER FILLER CO.**

MIDLOTHIAN, TEXAS



# HY-WATT

## Profitable Sales Opportunities for "Live Wire" Dealers!

Would you like to act as our agents for HY-WATT Batteries in your territory?

Motorists everywhere are specifying HY-WATT batteries, because they are the cheapest, more serviceable and longer-lived.

HY-WATT Batteries have made good under the most severe tests of service.

HY-WATT batteries are in reality semi-dry, because they have more moisture than the ordinary round cell. For this reason and for their correctness of manufacture, they deliver twice the electrical energy under the same load as the ordinary round cell.

HY-WATT batteries are guaranteed absolutely waterproof and have only two points of connection irrespective of the capacities required. Write for quotations. We have some special introductory prices.

**The Cleveland Battery & Electric Co.**

CLEVELAND, OHIO





after the present work of enlargement is finished.

**Davis Motor Co.**, Marquette, Mich., will soon move into its new sandstone garage. It will be two stories and have complete mechanical and accessory departments.

**Cooper's Garage**, Terre Haute, Ind., is nearly ready for occupancy.

**Ortman Motor Co.**, Washington C. H., Ohio, has bought a garage and leased additional space for its activities.

**John Johnson**, Rockwell, Iowa, has bought the Snyder garage and will put up a 44x80 brick addition for garage space and salesroom for Buicks.

**J. J. Hawk**, Oskaloosa, Iowa, has leased the Phelps building and will handle automobiles and an accessory stock.

**Amos Bordner**, Clinton, Ill., has added a steam vulcanizing plant to his equipment. He will make a specialty of rebuilding automobile tires.

**M. J. Scholey**, Kenosha, Wis., has begun work on what it is said will be one of the best garages in southern Wisconsin.

**Jack O'Brien**, Dennison, Iowa, has leased the Coleman property and installed a complete repair plant. It will be run in connection with A. L. Jackson's garage.

**Arthur R. Goertz**, Camp Point, Ill., has begun the erection of an up-to-date garage on the lots he bought recently of E. T. Selby. He has the Chevrolet agency.

**A. E. Price**, Batavia, Ohio, is building a 43x100 concrete and brick garage. It will have a complete repair plant and accessory stock.

**Charles Rahn**, Gas City, Ind., has bought the Gas City livery barn, where he will open a garage, repair room and accessory stock.

**Orville Cromer**, Savanna, Ill., has leased the J. D. Fulrath garage and already is doing a good business in repair work and accessories.

**G. W. Unger**, Marion, Ind., has bought the Marion Garage and Auto Co. Many notable improvements are being made in the building.

**Brubeck & Remely**, Rockville, Ind., have bought the Thompson & Walther garage.

**Wayne County Auto Co.**, Corydon, Iowa, has begun business in its new fireproof garage. It is said to be one of the best garages in southern Iowa.

**Gus Kasell**, Stanton, Iowa, has completed an addition to care for increased business.

**Chester Auto Repair Co.**, E. Liverpool, Ohio, is making rapid progress in completing its new fireproof 50x105 ft. garage.

**Allen Peck Co.**, Superior, Wis., is entirely rebuilding and materially enlarging its garage. The company also handles the Buick and Maxwell cars and the Vim and White trucks.

**Glenn Hoover**, Quincy, Ill., has opened a garage in the building formerly occupied by Kling & Matthews.

**Birney Clubine**, Mapleton, Iowa, has bought the Leltzen Auto Co. garage.

**Roy Mercer**, Hillsdale, Ill., is completing his new garage and repair shop on the Lagerblade property.

**Fallon Garage**, Hancock, Mich., is the new name of the Quincy Garage and Supply Co. It has moved to its new building, solid brick, 60x115 ft., with show room, storage room and repair shop. L. M. Fallon is the managing owner.

**Boyland & Lucas**, Arlington, Ill., are opening a new garage and accessory stock. They will handle the Patterson and other cars.

**Thoreson Bros.**, New London, Wis., have bought the repair department of the Jen-

nings Garage. Mr. Jennings will enlarge his garage to accommodate much new business in the sales department.

**Henry Behrens**, Peshtigo, Wis., has bought the Frank Kuhl property and is building a 48x100 ft. cement block garage. He is including a complete repair plant and accessory and sales rooms. Anderson Bros. will have charge of the auto livery business.

**Fred J. Darnell**, Roanoke, Ill., has begun business in his new garage.

**West Suburban Garage**, La Grange, Ill., for the fourth time has been compelled to enlarge its quarters.

**Louis Wiese**, Davenport, Iowa, has abandoned the horse livery business and with his two sons will run a garage and salesroom in the new building at 113-17 Harrison street.

**R. C. Schell Garage**, Beardstown, Ill., has occupied its new building, which will be used exclusively for storage and salesrooms.

**C. H. Lintz Co.**, Flint, Mich., after a public reception, have begun business in their new garage, said to be one of the finest in Michigan.

### Eastern States.

**Auge Auto Sales and Supply Company**, Reading, Pa., has opened a large supply store in connection with its garage.

**Wm. E. Hackett & Son**, Mahoningtown, Pa., have opened a garage on Montgomery avenue. Auto livery will be a specialty.

**Harry Vanderslice**, Ardmore, Pa., has begun work on a new garage in which he soon will be doing business.

**Central Service Station**, Binghamton, N. Y., has opened its new garage. It is of concrete, two stories and has complete equipment for all repair work, besides show rooms and offices.

**Traylor Motor Garage Co.**, Reading, Pa., is completing its handsome two-story brick and stone structure. It will be complete in every detail.

**Shannon & Claude**, Titusville, Pa., have bought the Keystone garage of Ehrhardt & Fogel.

**Stidhaen, Simonds & Co.**, Wilmington, Del., practical automobile men, have bought the Delmarvia Garage & Tire Shop and will do a general garage, repair and accessory business.

**Ideal Garage Co.**, Buffalo, N. Y., has bought the Hancock & Son garage, including real estate and fireproof garage.

**John N. Benedict Co.**, Binghamton, N. Y., has leased the brick and concrete garage at 44-46 Collier street. Aside from the garage and repair features, Cadillac and Reo cars will be sold.

**Donohue's Garage**, Washington, D. C., has begun business. Its building is 43x125 on Pennsylvania avenue, of modern construction throughout and has a complete service and repair department. Accommodation for 100 cars.

**M. Schnurmacher**, New York City, is building a four-story 50x100 ft. fireproof addition to his garage at 402-4 E. 108th street.

**Traylor Motor Garage Co.**, Reading, Pa., is spending \$50,000 on its new garage and show rooms. It is one of the handsomest buildings in the city.

**F. P. Gregory**, Peckville, Pa., is completing a new garage and repair shop.

**H. W. Peckham**, Clinton, N. Y., is rapidly completing his new garage and Ford salesroom.

**Adams & Friday**, Wampum, Pa., have opened a new garage and repair shop. They will handle the Bush car.

**W. R. Hall**, Erie, Pa., is building a \$4,000 addition to his garage.

**Delaware Motor Sales Co.**, Wilmington, Del., is completing its new fireproof garage.

**Smith Bros.' Garage**, Herikmer, N. Y., have bought the Herkimer Garage and are handling the Ford car.

### Miscellaneous.

A Missouri concrete manufacturer is experimenting with garages built on the silo plan. He has built an experimental one and it is declared to fill the bill.

Seattle is responsible for something which, lacking a more descriptive name, the American Garage and Auto Dealer will call a garageateria. It is a public garage and repair shop without any mechanics. The car owner takes his car into a compartment, spits on his hands, says a prayer, grabs the nearest tool and goes to it. But then, you know, Seattle is responsible for Gill, and that easily can account for a mechanicless garageateria.

You can't down Cleveland. Since she produced America's only billionaire, she is doing other things besides nipping off a little of Detroit's preeminence in the automobile manufacturing line, notably a garage that it is announced will be the largest in the world. Anyway, there will be storage room for 3,000 cars, and that is quite a sizeable garage.

So frequent have become the deaths from breathing the exhaust gases from automobile engines in small garages, that the government now has given official warning of the danger. It is to be noted that this danger is negligible in public garages, all the deaths being in private garages, where the asphyxiation gases are enclosed in a smaller space. In general, the Government Bureau of Mines, which conducted the investigation, decided: "An automobile engine should not be operated in a small garage unless doors and windows are wide open." Director Van H. Manning in his report says: "The gas made by automobile engines in enclosed garages is known as carbon monoxide. It is a colorless, odorless and tasteless gas. It is extremely poisonous because it combines with the red coloring matter of the blood more readily than oxygen does, and blood that is saturated with it cannot take up oxygen. The dangerous symptom of this carbon monoxide poisoning comes almost without warning and collapse in a garage generally proves fatal, unless outside aid arrives very soon, because the running engine continues to generate carbon monoxide and continues to make the air more poisonous." From all of which it would appear that public garages have something more in their favor than real economy to the car owner.

An average of about 600 cars a day are being driven from the Michigan factories to buyers in other states. More than 200 a day of these cars come through Chicago. The longest trip noted was of ten cars driven from Detroit to West Virginia. Dealers have no trouble in having buyers accept these deliveries, as the trip usually tries the car thoroughly. Incidentally, if these cars were not driven overland their buyers would have to wait, as every car available is eagerly snapped up by the manufacturers.

It looks about as sensible to have a municipal garage and repair shop as to create a municipal watch factory or shoe shining parlor. And the answer is seen in the Cleveland municipal garage, which last year had a gross revenue of \$3,366.15, not enough to pay the rent of the building and a night watchman. Perhaps another answer is the building of the Cleveland public garage that will store 3,000 cars.

What the retail druggists can do under the leadership of Avery, Freericks, White, Carr and others, the garage and motor trade retailers can do—only in a tenfold way—under the leadership of White and Carr. This means insurance savings—not only at once, but all through the years to come. Don't you think it is time for you to get busy, as many of your brothers in the craft have already done?



**SPECIAL DEALERS  
OFFER ON  
TRIPLE "C"  
CARBON CLEANER**

**CALDWELL**

## A SEASONS OPPORTUNITY

### OPPORTUNITY KNOCKS

Dealers find that motorists who know insist on Triple "C" Carbon Cleaner. It keeps the motor clean and peppery. For a limited time we will give with every order for one dozen pints one quart free, and with every two dozen pints

### THREE QUARTS FREE

Enough to clean a four cylinder engine three times sent prepaid for \$1.

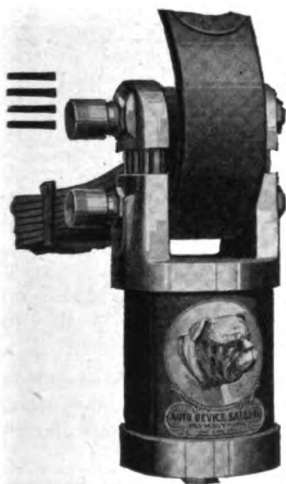
Triple "C" Cleaner retails for \$0.85 a pint and \$1.50 a quart.

We would like to hear from all live dealers.

*Order Now—Take Advantage of the Season's  
Biggest Offer. Satisfaction or Money Back*

**AUTO SUPPLY & MFG. CO.**

**210]Fourth Avenue, Pittsburgh, Pa.**



## Bull Dog Shock Absorbers "Eat Up The Bumps"

The eight-rod principle of these shock absorbers overcomes "excessive wearing out"—prolongs the life of the unit and eliminates the side and end swing.

Made for  $\frac{3}{4}$  and semi-elliptic springs. The former size can also be applied to the platform style of spring such as is used on the Cadillac, Packard, etc. The semi-elliptic style is for the Hudson Super-Six, Chalmers, Allen, Moon, Chandler, etc.

### Excellent Dealer Opportunities

*Satisfaction guaranteed for one year.*

**\$15 & \$20 per set—(two).**

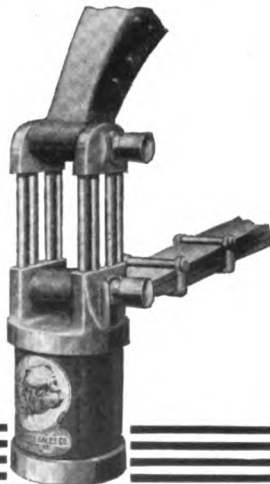
When ordering give name of model, width of rear spring, weight of car, and specify whether touring or roadster.

**Auto' Device Sales Co.**  
**PLYMOUTH, IND.**

**Chicago Office**

**1240 Michigan Ave.**

**CHICAGO**



**JOINTLESS**

## This Jointless Piston Ring Always Remains UNLEAKABLE

Two members of equal size, strength and form, assembled with the strongest part of one adjacent to the weakest part of the other absolutely insures uniform distribution of tension. Even though expanded to fit a worn cylinder, or to take up its own wear, it still remains leak proof—a feature absolutely unique with the JOINTLESS PISTON RING.

The construction of the JOINTLESS PISTON also prevents clamping, locking and relative rotary movements without the use of dowel pins, plugs or other devices which weaken and impair the efficiency of a piston ring.

**List Price, each . . . \$1.00**

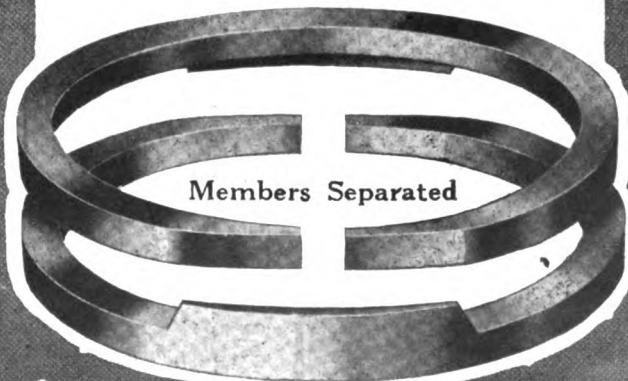
Every dealer, garage and repair man should be able to supply the demand for the JOINTLESS PISTON RING.

Order now and be ready for spring business.

## DETROIT PISTON RING COMPANY

**20 E. Jackson Blvd.,  
Chicago, Ill.**

**55 Richmond St.,  
Detroit, Mich.**

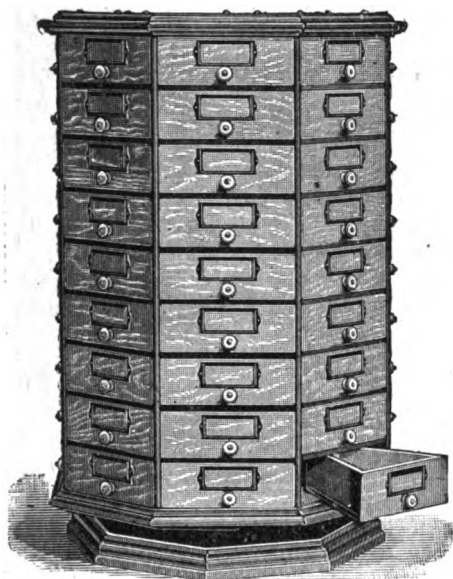


**Members Separated**

# Auto Accessories and Garage Equipment

## Revolving Bolt and Screw Cases.

Every garageman and accessory dealer has learned by bitter experience the loss in keeping a stock of nuts and bolts or other small parts in open packages. A



match for this loss is the wastage of time in looking for these small parts and often finding they are not in stock.

American Bolt and Screw Case Co., Dayton, Ohio, has come to the rescue of many a small parts stock with its line of revolving cases. Judging from a long list of complimentary letters, every buyer is satisfied. The company now is making a de-



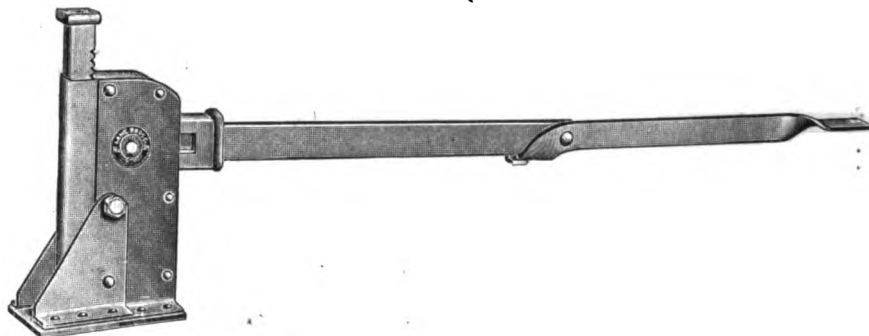
termined effort at getting one of its cases in the hands of every automobile man carrying a stock of small parts.

The cases themselves are in a series standardized to meet every known want of the garageman, auto dealer and repairman. A feature of the output of the company, however, is the building of special cases for special purposes. Some of these in turn, such as cases for filing catalogs, etc., have been added to the regular line.

Many years before the automobile was known, the American Bolt and Screw Case Co. was a recognized leader in the manufacture of revolving cases. Its method of construction makes the drawers practically indestructible and dust proof; the whole case being strong and rigid enough to stand up under any load. Fuller information and catalogs can be had by writing the company.

## Lane's 3-Ton H-C Truck Jack.

The Handle Control Automobile Jack brought out last season by Lane Brothers Company, Poughkeepsie, N. Y., has resulted in such a strong additional demand for a similar Truck Jack that the manufacturers are responding with the 3-ton



size here illustrated. It weighs twenty-seven pounds complete, stands twelve inches high, lifts six inches and is fitted with 48-inch folding handle.

The distinguishing features are the great length of handle and the ability of the operator to manipulate the jack entirely from the outer end of the handle. This at once conduces to safety, convenience and powerful lifting leverage. As in the smaller sizes of H-C Jacks, the handle is securely held into the socket by a spring catch, and reversal of the jack is accomplished by a lengthwise twitch on the handle.

It is anticipated that this new size also will find a considerable field in the general service and repair departments of garages throughout the country as well as for general lifting purposes within its capacity not necessarily connected with the motor vehicle industry. The price has been fixed at \$10 with trade discount same as on the company's Automobile Jacks.

## Twin Fire Spark Plug.

There is a general belief among motorists that the number of sparks a plug gives depends only upon the number of points. In other words, a plug with three points will give three separate sparks, a



five-point plug five, and so on. While this belief is natural to the layman it is erroneous because with the construction ordinarily used no plug could fire more than one separate and distinct spark.

The Twin Fire Spark Plug, placed on the market some months ago, is able to fire two distinct sparks because it is a two-series plug. There are two fire points on the plug which operate simultaneously, but the operation of each is entirely independent of the other.

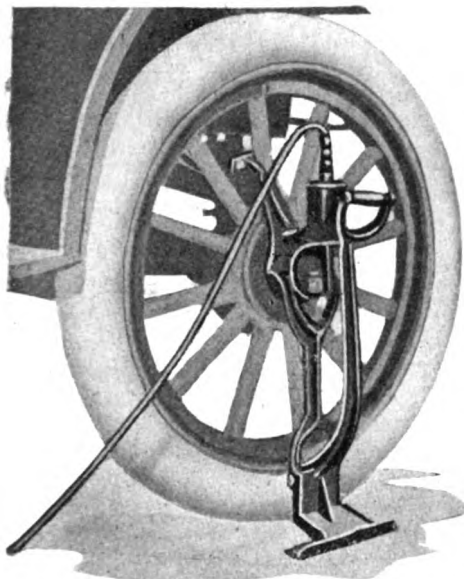
This means that if one point becomes clogged with oil or carbon the other continues to fire; and a few hot explosions soon clear the fouled point.

This type of plug consumes no more current than the one point plug. The two sparks firing at the same instant provide a double intense spark with a resulting increase in power.

The Twin Fire principle is covered by basic patents held by the Twin Fire Spark Plug Co., of Detroit; and the demand for it among motorists has already absorbed the company's production for several months ahead, and made necessary the immediate construction of larger manufacturing facilities.

# FORD customers! *will want the*

## DONALD POWER TIRE PUMP



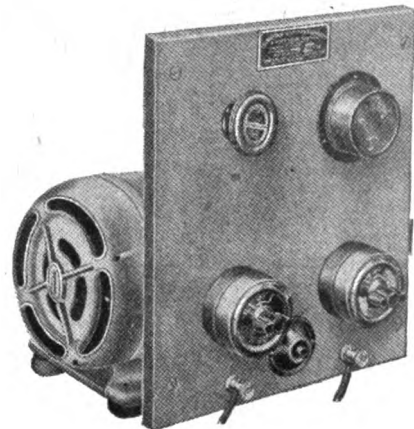
By letting the engine run on its slowest speed on high gear the rear wheel, which is jacked up, furnishes the power to drive the pump, which will inflate either of the other three tires, in from one minute to one minute and thirty seconds.

The DONALD Pump is designed to give the Ford owner a high class, efficient pump at a moderate price.

Live dealers should write for sales particulars.

**DANVERS SPECIALTY COMPANY**  
DANVERS, ILL.

A Big Thing for the Garage and Repair Shop



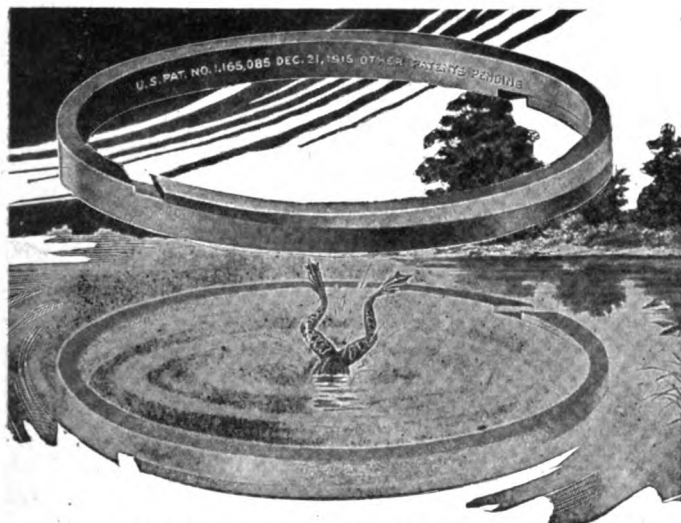
## ELLINGTON Small Battery Charger

simplifies and facilitates battery charging and puts it on a more profitable basis.

Is a compact little outfit and in operating on 110 or 220 volt 60 cycle is a 50 volt motor generator capable of charging from 1 to 5 sets of 6 volt batteries or up to 10 sets in series parallel. Requires no attention when charging, can't burn out regardless of how handled, will withstand overload and so low in price that every Garage and Repair Shop should use one to supply the needs of the motoring public.

We have all the information you require. Write.

**ELLINGTON ELECTRIC CO.**  
Quincy, Illinois



### Expands in a Perfect Circle

The Inland is absolutely gas tight because it has no gap and because it expands in a perfect circle, making positive contact with the cylinder wall. Strongest and most durable ring because ONE-WIDTH and THICKNESS all around. Low priced because it is ONE-PIECE.

Already the standard equipment on Franklin, Stutz, Pathfinder, Apperson, Hal 12, Weikely motors, etc.; used in 100,000 cars and now chosen for ARMY AEROPLANES. Inlands in any motor will produce

25% MORE POWER AND MILEAGE.

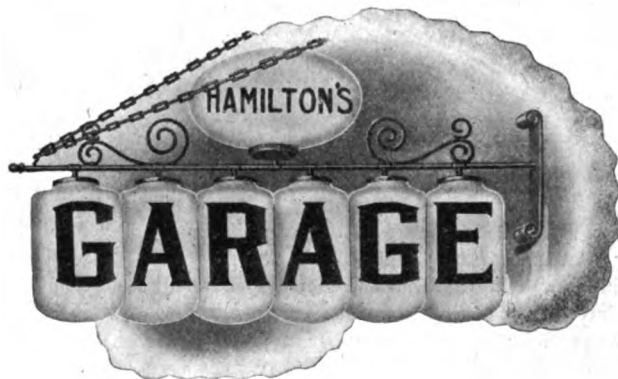
90 days trial—money back guarantee. Get our proposition.

Inland Machine Works, 817 Mound St., St. Louis, Mo., U. S. A.

**INLAND**  
**1 PIECE PISTON RING**



Write for Booklet



### "LIGHTS TWO SIDES"

Cost to run this sign at 9c per k. w. with 7-40 watt lamps 2 1/2c per hour, or 5 hours at night 12 1/2c a night.

Will pass Underwriters' Inspection anywhere in U. S.

## "CAN YOU BEAT IT?"

...MADE BY...

**The Dawes Electric Sign & Mfg. Co.**

Factories: No. 1 and 2 Arrott Power Building

Displays Room: 2004 Jenkins Arcade

PITTSBURGH, PA.



### Detroit Cartridge Lock for Fords.

Wallace C. Hood Service Bureau, Detroit, Mich., is distributor for the United States of the Detroit Cartridge Lock for Ford cars. The lock is manufactured by the Detroit Motor Lock Company.

The Detroit Cartridge Lock is the only magneto locking device yet perfected, and absolutely locks Ford cars by shutting off the Ford electrical system at its source. It absolutely complies with all police regulations, municipal ordinances and insurance requirements. Extreme simplicity, both in construction and operation are marked characteristics.

It is a magneto circuit breaker enclosed in a case hardened steel tube covering the magneto connection plug and extending up above the floor line of the car. In order to securely lock the car, simply push down the foot lever near the top of the lock which automatically shuts off the motor. The car can then only be unlocked by a serially numbered key carried by the owner.

There is still some very desirable territory available for distributors and dealers which can be obtained by promptly addressing the Wallace C. Hood Service Bureau, Detroit, Mich.

### Maxwell Men Are Stayers.

One afternoon during the recent Chicago Automobile Show there were present in the Maxwell headquarters eight dealers, who have been with W. E. Flanders since the old days of the E. M. F., back in 1908. Harry Lord of the Lord Motor Company, Los Angeles, sold 70 E. M. F. cars in 1908. This year he will sell more than 3,000 Maxwells.

Harry Cunningham of the Cunningham Auto Sales Company, Detroit, sold 120 E. M. F.'s in 1908, and will sell 3,500 Maxwells this year.

Wm. Benson, San Jose, California; Warner Batemen, San Diego; Kirk Dobson, Columbus, Ohio; Charles Newby, Des Moines, Iowa; these men and several others have grown year by year under the guidance of Mr. Flanders until now they handle an immense volume of Maxwell business.

Flanders does not believe in making changes in his dealer organization or among his employees unless it is absolutely imperative. And his record certainly proves that his best men stay by him and those who have are well satisfied and prosperous.

### Paco Mfg. Co. Enlarging Business.

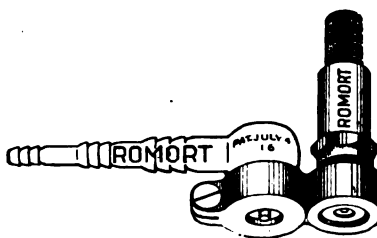
Paco Mfg. Co., Galesburg, Ill., is preparing to greatly enlarge its activities in the building of car bodies, its business in sight being materially increased. The Paco company is manufacturing under its own patents and has granted manufacturing rights to Fried & Stonier Co., the business being carried on under the name of the Paco Mfg. Co.

### Romort Specialties.

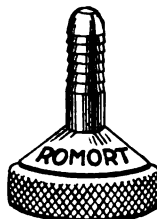
Romort Manufacturing Co., Chicago and Seattle, are making a line of specialties of decided advantage to the dealer.



The Romort Automatic Air Valve already is in general use in free air stations. It is a guaranteed product with respect to durability, being constructed with a special view to withstanding rough usage and always remaining absolutely air tight. The valve weighs but nine ounces and costs \$3.



The Romort Straight Pump Connection is an accessory of use to the car owner every time tires are pumped. It eliminates the old screw connection and will not leak or blow off in use. It lists at 15 cents.



The Romort Tire Tester Attachment gives the service station a permanent holder for their garage with a tire tester and tire inflater combined. It lists at \$1. The Romort Co. can be addressed at 1323-25 Michigan Ave., Chicago, or 1810 Westlake Ave., Seattle.

### Policy of the Service Motor Supply Co., Mail-Order-to-the-Dealer Jobbers.

The Service Motor Supply Co. of Chicago can be considered in the light of the pioneer in the cash-with-the-order, low-price method of wholesaling in the auto line. They conduct a cash business, not only selling for cash, but buying for cash. They take advantage of every discount given to get the prices down to the minimum. In this way, it is asserted, they can sell at much lower prices than are ordinarily charged, and as they have no large force of office employees engaged in billing, bookkeeping, etc., their overhead expense is greatly reduced and they can afford to give customers the benefit of this saving.

They publish a monthly house organ catalog, called "Snaps," containing articles of timely interest to dealers, and the current

wholesale prices on the merchandise listed. In this way, the dealer gets the saving due to any reduction in price every 30 days, instead of at the longer intervals usually designated.

The Service company does no retail business. They will not sell to the consumer, feeling it due their dealer customers that they sell only the legitimate business man in auto accessories. They have a large organization that enables them to ship 90 per cent of their orders within six hours after they are received. A "turn-down" department looks up all orders that are not identified, and if they are found to be other than garagemen or dealers, the amount sent is promptly returned, accompanied by a letter politely informing the consumer that the Service company does not sell at retail, and giving the consumer the names of the nearest garagemen or dealer handling their supplies.

### Saxon Trail Blazer Now Traveling Boundary.

Saxon Four National Boundary trail blazer was a feature of the inauguration day ceremonies in Washington previous to its start from the national capital on its long journey around the edge of the country.

Saxon trail blazer earned the right to its name in the first two days for it blazed a motor trail over the muddiest roads that Virginia has seen in years and completed the first motor car trip between Washington and Richmond that had been made for more than three weeks, due to the mud runways that masqueraded under the name of highways. From Richmond the car has pushed on to the coast and is now traveling southward along the Atlantic shore. It is expected that five months will be taken up in the boundary trip.

The need for a highway around the rim of the country has long been felt by many motorists who have exhausted the motoring possibilities of the present roads across the continent and seek new fields to conquer.

### Few Changes for 1917.

Automobile manufacturers have long ago abandoned their earlier attempts at working up repeat business by radical changes, whether or not such changes were improvements.

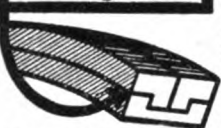
In general, one familiar with a model of a year or two ago, can instantly name its 1917 successor. From year to year there is a closer likeness in all details to the model of the preceding year. From a former dread of acknowledging such similarity, automobile manufacturers are switching to the other extreme. The Haynes company, for instance, asserts that except for minor details there has been no change in the Haynes car for three years.

The conclusion is that, until some new and vital improvement has been conceived, the 1917 models are as good as can be made for the prices asked.



BEWARE OF  
IMITATIONS

The right-angle  
interlock is your  
safeguard



## PISTON RINGS

This perfect three-piece construction justifies the name—**EVER-TIGHT**. Note how accurately the right angles fit together. Engineers and Engine Builders acknowledge that this is the only proper construction for safety and prevention of leakage.

### Get Your Share of EVER-TIGHT Profits

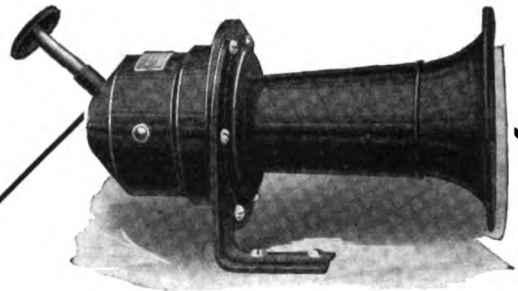
Make money for yourself and save money for your customers by installing Ever-Tight Piston Rings in their cars. That puts you "in solid" with your trade and gives your bank account a boost at the same time.

Ever-Tight Piston Rings absolutely prevent leakage. They are guaranteed to give compression in out-of-round cylinders as well as in true ones. They produce more power—thus reducing maintenance cost.

Ever-Tight Piston Rings consist of three separate parts grooved together into one ring by its own right angle interlock. They fit tight, without binding. They are flexible, and friction is reduced to the minimum. The Ever-Tight is the only perfect three-piece piston ring on the market. It is the leader.

It's up to you to investigate Ever-Tight Piston Rings for your own sake as well as your customers'. If dealers do not carry Ever-Tight Piston Rings, write us direct.

**Ever-Tight Piston Ring Co.**  
1431 Chestnut St. St. Louis, Mo.



## The Garford Hand Horn — \$3.50

Couldn't be better if  
we charged \$100.00

It is at once the simplest and most dependable of all Warning Signals.

Note the rakish slant of the plunger, set at an angle of 45 degrees. This makes it convenient to operate.

A touch of the finger on this plunger gives you all the warning that you want instantly. The note may be modulated at will from a loud, far-flung call to a short, snappy signal to clear the road.

Remember there are no batteries, nothing complicated in construction and nothing to get out of order.

*We have a splendid proposition for dealers.  
Write for terms.*

**The Garford Manufacturing Co.**  
ELYRIA, OHIO



## Garage Signs

To the garage a Flexlume sign is a necessity—a business-pulling investment.

Its raised white letters standing out from a dark background make not only a bright, distinctive night display, but an attention-pulling day sign.

A few dollars will bring a Flexlume garage sign to you, cash or easy payments.

*Write for sketch and full information.*

### FLEXLUME SIGN CO.

1450 Niagara St., BUFFALO, N. Y.  
St. Catharines, Ontario  
Electrical Products Corporation, - Los Angeles, Cal.



## Ganschow Gears

are the standard of quality for the automobile industry. Our quick service has also made the names "GANSCHOW" and "GEARS" synonymous to car owners, garagemen and repairers.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or Foreign manufacture. Workmanship and quality guaranteed.

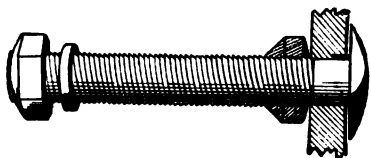
### William Ganschow Company

1002 W. Washington Blvd., Chicago, Ill.

### Holland Demountable Wheel Outfit.

Holland Demountable Wheel Co., Holland, Mich., have a money-back guarantee on their Lightning Demountable Wheel outfit. The guarantee has been found a good selling argument and has not cost the company a dollar.

The outfit itself has become a source of decided profit to the hundreds of dealers handling it. Fords, 490 Chevrolets, Maxwells and all cars using 28x3, 30x3



or 30x3½ tires are prospects. Any of these cars, fitted with the outfit and a spare wheel, can have the old wheel off and the new one on in three minutes. It is a case of loosening only six nuts and the interrupted trip can go on. There is no soiling of hands and no delay.

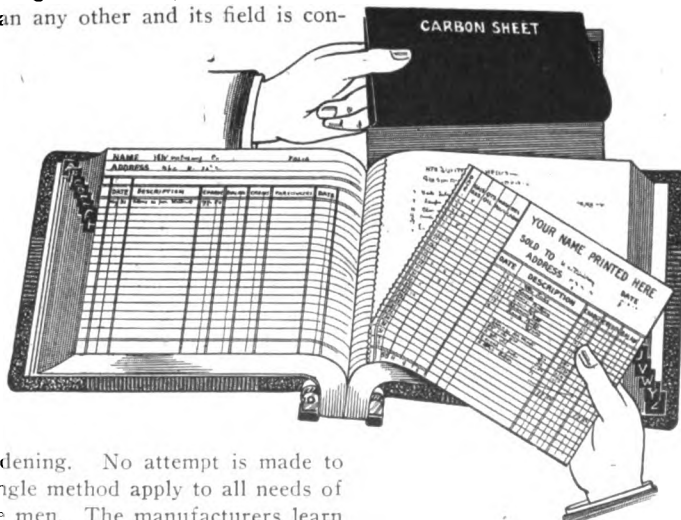
The Holland Demountable Wheel Co. is making a special offer to all dealers and invites inquiries. The outfit costs \$4 east of the Rockies; \$4.50 west of Rockies, with a liberal margin to dealers.

Put in a line of dusters, gloves and caps, and advertise the fact to the motoring public. They may never think of them in connection with the garage, hence advertising is necessary and all the more likely to "soak in." You will have five chances to the clothier's one to sell motorists these goods.

### Garageman's Accounting System.

The average garageman wants the simplest bookkeeping system possible; one from which he can get the proper results, but also one which can be kept with the minimum amount of labor.

More garages have adopted the Harton system than any other and its field is con-



stantly widening. No attempt is made to make a single method apply to all needs of automobile men. The manufacturers learn the needs and readily adapt the main principles to the individual.

### Anti-Blowout Tire.

A new tire that is said to be proof against blow-outs is being manufactured by The Amazon Rubber Company, Akron, Ohio.

The anti-blowout feature is a simple yet ingenious improvement—an extra fabric reinforcement, or breaker strip. It is built into the side walls of the tire where the traction wave is generated and where all the bending, twisting, straining action is taken.



This side-wall breaker strip circling the tire binds it into an inseparable unit, prevents the side walls from over-stretching or bulging and detracts from its resiliency not in the least.

It absorbs and distributes bumps and shocks taken on the side-walls, the same

Thomas J. Harton & Co., 212 Church St., New York City, are the manufacturers. It is suggested that garagemen, auto and accessory dealers and repairmen write this firm and get a suggestion as to the best method of accounting to use. The suggestion is certain to be a simplified form

of bookkeeping that especially appeals to the average garageman.

as the regulation breaker strip on the face of the tire, with the result that the tire is enabled to stand very brutal treatment and deliver unusually long mileage.

The tire has a very handsome and distinctive appearance; the jet-black body has a snow-white stripe on the side-walls. The tire is hand-made, constructed throughout of the highest grade materials, and is made in the non-skid style only. Distributing agencies are now being established.

### Automatic Time Stamp System.

An Automatic Time Stamp system is a real necessity to the garageman and dealer. If for no other reason, it will pay its way from the beginning by settling all disputes on labor items. There can be no doubt about the time. A clock-recording device settles that.



Practically all the service stations and garages of the eastern cities have put one of these time stamp systems into use. Each is made for a particular need, from keeping the work time of employees to showing every minute that was put on a particular job.

Garagemen and dealers are requested to send inquiries to The Automatic Time Stamp Co., 160 Congress St., Boston, Mass., with a note as to how it is wished to use the time stamp. Particulars will then be sent promptly.

## THE NAME SPACKE ON AIR COMPRESSORS INSURES SERVICE-QUALITY-ECONOMY

In the construction of Spacke Air Compressors the first thought is—quality—rigidity—endurance. It is possible to build cheaper air compressors than the Spacke, but if it were possible to build a BETTER air compressor—it, too, would be a SPACKE.

Install a SPACKE and end your air compressor troubles.

### THE F. W. SPACKE MACHINE COMPANY

WRITE US  
TODAY FOR  
PARTICULARS

Indianapolis, Ind.



### Mr. Dealer

## There is Big Money for you in FORD BODIES

The Millspaugh and Irish line of Ford Coupes and Sedans is distinctive and different. They really transform Fords into handsome, graceful cars and enable owners to use them the year around. The very sight of one of our Sedans or Coupes makes the Ford owner desire it. An all-year-round seller.

The prices are moderate and the margin of profit to you is large.

Our Ford bodies are all of standardized dimensions and can be fitted to any Ford Chassis in an hour's time.

Write today for dealer's proposition

## Millspaugh & Irish

212 W. McCarthy St., Indianapolis, Ind.

## SAVE TIME AND MONEY

### Our SPECIAL GARAGE Bookkeeping Plan Gives You the HIGHEST Possible EFFICIENCY

THIS particular device is especially adapted for garage use.

GARAGE keepers everywhere acknowledge this to be the most economical and practical system.



#### A FEW REASONS WHY

- 1—When you enter an account, a bill for the customer is made at the same time.
- 2—Simplified method for recording and posting all items.
- 3—Avoids the necessity of posting each item.
- 4—Requires the minimum amount of labor.

This page is the customer's bill; the one underneath is your copy.

Harton's Garage and Accounting Record is another new labor saving device we make. Ask about it.

SEND FOR DESCRIPTIVE FOLDER AND FULL PARTICULARS

**THOMAS J. HARTON & CO., Inc.** 212x Church St. NEW YORK

Loose Leaf Specialties

## PARRETT TRACTOR

"SPEAKS FOR ITSELF"  
ONE MAN ALL PURPOSE

## Tractors and Automobiles

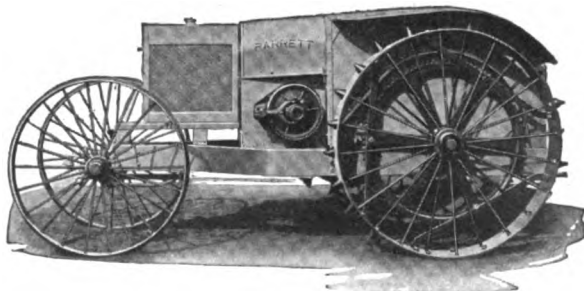
Sell side by side to the farmer

Using the same good judgment in selecting the tractor to sell that you use in selecting the automobile—you will choose the Parrett. A successful tractor manufactured by a reliable company.

For full particulars address

## Parrett Tractor Company

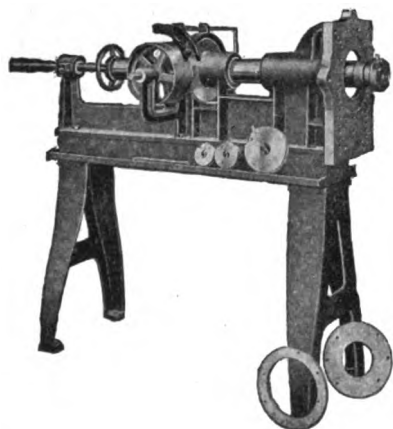
429-A Fisher Bldg., Chicago, Ill.





### Marvel Re-Boring Machine.

The essential feature of the Marvel Re-Boring machine is that it re-bores instead of re-grinding the cylinders. This sounds revolutionary, but is in strict conformity with modern practice by the best automobile manufacturers.



This machine, as illustrated above, is compact, scientifically built and will accurately re-bore any cylinder from  $2\frac{1}{2}$  to 8 ins. in diameter, and up to sixteen inches deep. A Minneapolis concern does from \$15,000 to \$20,000 worth of re-boring per year with two of the machines. Hundreds of garagemen and repair shops have installed them and all seem to be doing profitable work.

In actual operation, although a good mechanic can of course do the work faster, it has been found that an unskilled person can get accurate results. The manufacturers claim it is practically impossible to do an imperfect job with the machine.

The Marvel Machinery Company, Minneapolis, Minn., is not satisfied with a sale of the machine. It co-operates at once with the buyer in working up business, through several forms of publicity. One of the items is a leaflet descriptive of many of the car owner's troubles, which are caused by carbon deposits in the cylinders. Often there is a loss of 50 per cent in efficiency and a very costly added consumption of gasoline and oil. These leaflets are given the buyer in sufficient numbers to supply his possible customers and in general result in an added business, which makes the machine an extremely profitable investment.

Fuller particulars can be had by writing direct to Marvel Machinery Company, 609-12 Boston Bldg., Minneapolis, Minn.

### Non-Gran Bronze.

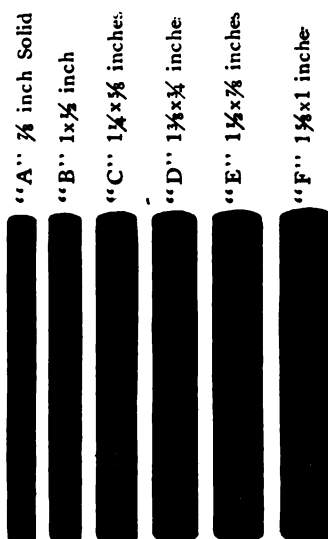
One of the "object lesson" exhibits of the Chicago show was that of the American Bronze Co., Berwyn, Penn.

One of the features that aroused much interest was two new Mercer pistons with connecting rod assembled, in one of which the Non-Gran Bronze wrist pin bushing had been reamed four thousandths of an inch too large. This showed in a striking way the effect of slight wear on a wrist

pin bushing as there was a decided play between the pin and the bushing; enough to develop a knock in an engine.

The lesson drawn from this exhibit was the fact that only the first two thousandths of an inch on the surface of a wrist pin bushing was of any real use. The rest of the metal had to be thrown away after this thin surface film had been worn away by friction. This was pointed out as conclusive evidence that only the most durable metal obtainable should be used for these bushings and the consensus of experience showed that Non-Gran Bronze outlasted all other bearing metals for such severe duty.

To the garageman the cored bars on exhibition were of particular interest as they represented very convenient and quickly available stock for making these bronze bushings when overhauling cars. The "6-54" assortment which is illustrated in this article was of particular interest to garagemen, as from these six bars any



of fifty-four standard automobile bushings can be made. It takes care of every bushing needed to fit any possible shaft diameter up to  $1\frac{1}{4}$  in. As these bars contain exactly the same metal as the bushings which the American Bronze Company furnishes to the famous makers they serve, they are a sure guarantee that bushings made from them will be as good as the original ones which they replaced.

### Dealers and Garagemen Should Send for This Valuable and Free Truck Book.

What wears a motor truck out? Wear and tear. But what wears a truck out in three or four years which is built to last ten or fifteen years? Overloading, overspeeding, reckless driving and lack of proper care by the driver.

The abuse of trucks is admittedly one of the greatest problems facing the motor truck industry today. American businessmen, with their accustomed dash, are prone to speed up the operation of their trucks and overstep the bounds wisely fixed by the engineers who designed them. Still the

truck has proved a profitable investment, even when its possible life has been reduced one-half or three-fourths.

### The Most Urgent Problem.

The B. F. Goodrich Co. recently asked the truck manufacturers of this country what subject they would like to see treated as an introduction to the 1917 issue of "Motor Trucks of America." A large majority of the replies indicated that the most urgent problem facing the industry was that of truck abuse. It was felt that if the American business man could be shown how overloading, overspeeding, etc., cuts down the productive life of his motor truck, he would avoid them, and thereby greatly increase the value of his investment.

In response to this demand S. V. Norton has treated this subject under the title, "Lengthening the Life of the Motor Truck." The effect of overloading on the axles, springs, wheels, tires, frame, transmission, motor, etc., is clearly shown. Overspeeding and bad driving is discussed and the point is driven home that by avoiding these abuses the American merchant can increase the life of his truck almost indefinitely, leaving it subject, in fact, only to the natural wear and tear of the steel of which it is composed.

This article, however, is merely the introduction to the 164-page issue of the 1917 "Motor Trucks of America." This hand-book originated in 1913, and is awaited more and more eagerly at the beginning of each year by the Motor Truck industry. This year's edition contains the complete specifications of 118 makes of American motor trucks, with a photograph of each truck.

### Telegraphic Information Secured.

"This year," said Mr. Norton, truck tire sales manager of the Goodrich company, "in order that this hand-book might be given to the industry as early in the year as possible, and at the same time carry the very latest information regarding the hundreds of different models, we requested all manufacturers to use the telegraph in reporting their O. K. or any changes covering their specifications. A few manufacturers, making eleventh-hour changes in price or design of some of their models, sent us wires to that effect. We took these wires over to the printer and changed the type before we released it for printing. The 1917 'Motor Trucks of America' has the distinction of being the largest volume which we have yet published.

"While the increased size of the book and the cost of paper and ink have made each copy cost us 30 cents to produce, we shall adhere to our original policy of distributing it without charge to responsible persons interested in motor trucks. Requests, however, must be sent in on business letterhead and should be addressed to the 'Truck Tire Department, B. F. Goodrich Co., Akron, O.'"

## The Can That Keeps The Breath in Tires

Is 6 months immunity from punctures worth from \$10 to \$16 to you? If so, USE



Do you want to double or treble the life of your tires? If so, USE

# TIREOID

## "IT SEALS PUNCTURES"

We give you an armor plate guarantee that you will not have a puncture within six months after your tires have been treated with TIREOID. Your money back if it fails. TIREOID is a mineral, semi-solid preparation, which is injected into your inner tubes.

It SEALS PUNCTURES INSTANTLY WITHOUT LOSS OF AIR. You never knew you struck that nail.

TIREOID does not affect the resiliency or buoyancy of the tire, and it prolongs its life indefinitely.

### AGENTS EVERYWHERE

Let one of them demonstrate TIREOID to you and explain the terms of our guarantee. Costs \$10 for set of 3 or 3½ inch tires, \$13 for 4 or 4½ inch tires, \$16 for 5 or 5½ inch tires.

### THE TIREOID COMPANY

1200 Michigan Avenue

CHICAGO, ILL.

## Demountable at \$1.00 A Wheel

### The Greatest Proposition for Dealers and Their Customers

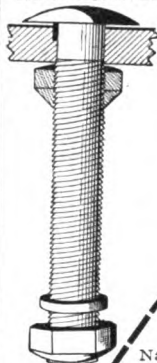
Service Stations and Garage Men, be prepared to supply your customers with the new Holland Lightning Demountable Wheel Outfit. This latest invention makes a customer a friend of yours for life. You save him time—you save him money—you help him get every moment's pleasure out of his car. Get in on this proposition. It's the quickest and best system on the market.

Once installed, wheel changes can be made by merely loosening six nuts. Only three minutes and so easily done that it is simply fun.

## The HOLLAND Lightning Demountable Wheel OUTFIT

For Fords, 490 Chevrolts, Maxwells and  
Cars Using 28x3, 30x3, and 30x3½ Tires.

Only a spare wheel required. Once installed, the old wheel comes off and the spare one goes on in a jiffy. Never any need to run on flat tires—no need to buy different tires—the spare wheel fits all around. Easier to change than a demountable rim and no soiled hands.



### Money-Back Guarantee

Full instructions for installing and Free Wrench with each outfit.

Be first in your locality to get this proposition. Customer's price only \$4.00 east of the Rockies, \$4.50 west of the Rockies, for complete outfit. Dealer sells the spare wheel. Liberal arrangements being made with dealers who write quick. This offer is open to you now. Investigate.

### SEND THIS COUPON NOW

HOLLAND DEMOUNTABLE WHEEL CO.

DEPT. 10

HOLLAND, MICH.

HOLLAND DEMOUNTABLE WHEEL CO.

Dept. 10

Holland, Mich.

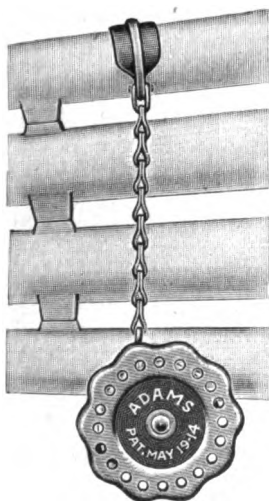
Gentlemen—Please send me your liberal proposition on the Holland Lightning Demountable Wheel Outfit.

Name .....

Address .....  
(Attach to your letterhead)

## Adams Auto Top Holder

"STOPS THE RATTLE—SAVES YOUR TOP"  
NEATEST—QUICKEST—STRONGEST



Dealers everywhere will find a ready sale for this best of all Top Holders. An ornament to any car. No unsightly projecting arms, nor dangling straps. Can be installed in two minutes, and operates quicker than any other.

Two sizes — 5/8" holes for small cars. 3/4" for large ones.

Price \$2.00 per pair

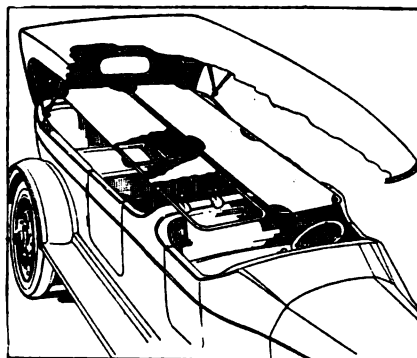
Write for Discounts to Dealers

## ROCK ISLAND MFG. CO.

Department C

ROCK ISLAND, ILL.

## SLEEP COMFORTABLY AND CHEAP



Cut showing 2 Kots placed side by side.  
Each one is 6 ft. long by 2 ft. wide.

The "ANY-KAR" AUTO KOT will fit any 5 or 7 passenger car, adjusted in 1 minute to fit a Packard or Ford. Made of galvanized iron tubing, hinged in the middle and covered with 12 oz. ducking. When not in use can be folded and carried in the tonneau, out of

the way. When in position the Kot lies perfectly level and is as comfortable as a bed. Weight 15 lbs.

### YOUR CUSTOMERS WILL WANT THIS

Every automobile owner who does any touring; every salesman who makes his territory in a car; campers, hunters, fishermen—any one who remains away from home over night with his automobile, can cut his traveling cost one-third and sleep comfortably in an "ANY-KAR."

Write today for full description and our proposition to dealers. One wanted in each town.

## PEORIA AUTO-KOT COMPANY

PEORIA

Dept. 5

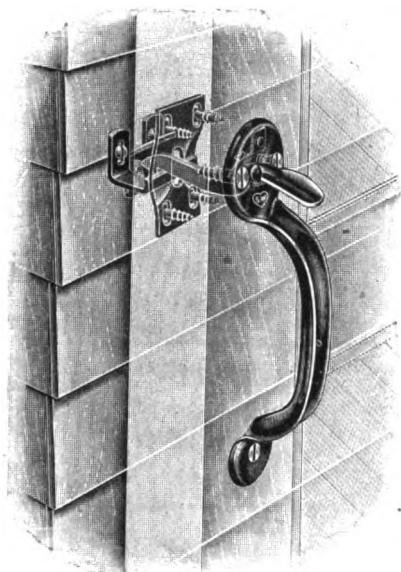
ILLINOIS

### Wrought Steel Back Catch.

The Stanley Works, New Britain, Conn., have added a wrought steel back catch to their line of garage hardware.

The back catch is for use on 1¼-in. garage and barn doors and holds the door firmly when swung open against the side of the building. Opening the door forces the stout hook over the catch plate, in which position it is securely held down by the double leaf steel spring. To unlock the hook, press lightly on the thumb piece. The handle is used as a pull to close the door.

The escutcheon plate is struck up to act as a bumper against the catch plate,

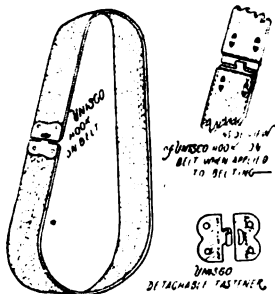


thus taking off the hook the shock of the sudden stopping of the door's motion. By means of the slotted screw holes the catch plate may be adjusted to meet the bumper squarely.

These are packed one set in a box with screws, and can be furnished in Stanley japan and sherardized finishes. For further information, prices, etc., write to the Stanley Works, New Britain, Conn.

### Unisco Specialties.

United Specialties Co., Cincinnati, Ohio, is finding a ready market for its Unisco Hook On Fan belt for Ford cars.



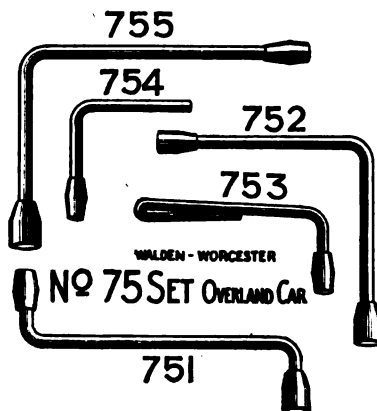
This hook is self-righting. Even if the hook is put on crooked or if the belt is not straight, no particular harm is done. The hook allows for side-sway, working as if on a pivot. In addition to this the engine can be hot enough to fry an egg

and the Unisco belt can be attached without burning the hands.

In addition to this belt, the United Specialties Co. makes a large number of popular specialties, such as belting, rear curtain lights, belt lacing and belt hooks, rain-proof canvas gloves, etc. Reading matter and full particulars on application to the above company.

### Walden-Worcester Wrench Sets.

Walden Mfg. Company, Worcester, Mass., is putting out about 150 wrench sets; one each for all standard makes of



cars and a dozen or more combination wrench sets for use on any make of car.

The retail price of a complete set for

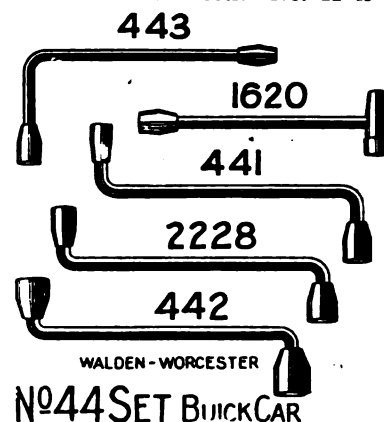
### Auburn Tete-a-Tete Roadster.

There are two reasons aside from its news interest for reproducing an enlarged view of the Auburn Light Six, four-passenger roadster.

The first reason is that an error was made in quoting the price on this car in a

an individual car averages \$2.25. Each set is complete, there being no necessity for the car owner carrying any other wrench than is provided.

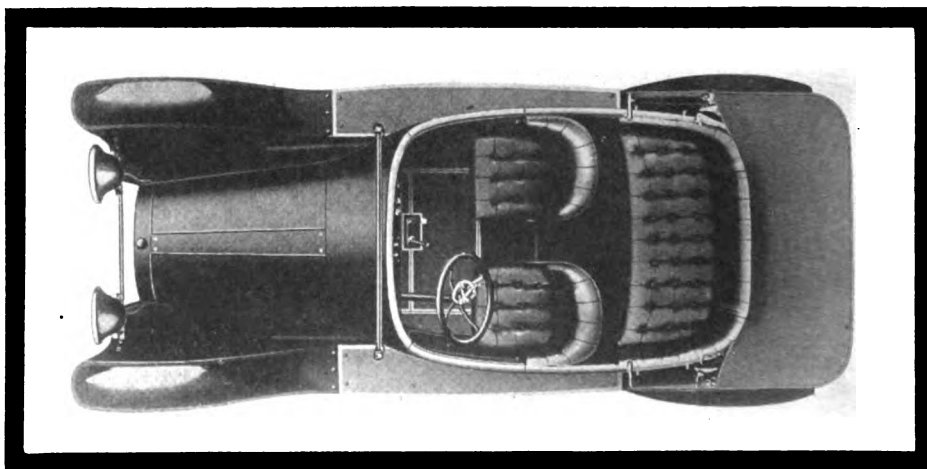
In addition to the sets for use on the different makes of cars, is a series of combination wrench sets. No. 12 is con-



sidered the last word in this line. There are fifty-one real combination wrench parts in No. 12, one at least applying to any wrench need on any car. Some of the extension bars in this set provide for reaching a nut at a distance of twenty-five inches. A feature of this combination set is that the wrench is always used as close to the nut as working space will permit. The set is enclosed in a strong, well finished wooden box, with ample space for each part. It retails at \$12.

its Tete-a-Tete Roadster. Its interior arrangements are perfectly shown in the illustration. It is roomy and comfortable for four passengers, with divided front seat. In the rear of the body there is ample luggage space.

The equipment is complete. It has a



recent issue. A letter from the Auburn Automobile Co., Auburn, Ind., gives the information that this car is priced at \$1,145, f. o. b. Auburn. The second reason is that it is one of the most satisfactory aeroplane photographs ever taken of an automobile.

The Auburn company calls this model

new style electric headlight with a small auxiliary light, as well as electric cowl and tail lights. An electric horn is concealed by the hood. The windshield is of a new style, two-piece, clear vision, ventilating type. There is a magnetic type speedometer, tire iron, one-man top and hood and complete kit of tools.

## GREATER PROFITS From Your Repair Department

and absolute satisfaction to your customer if you base your charges on actual time consumed and can submit records as evidence—no embarrassing errors or disputes.



Price \$7.00

Guaranteed

Your repair department automatically increases its efficiency and your profits by using the

### New Improved Cosmo Time Stamp

It records accurately date, hour and minute each job is started and finished—speeds up the entire shop—permits no “loafing on the job.”

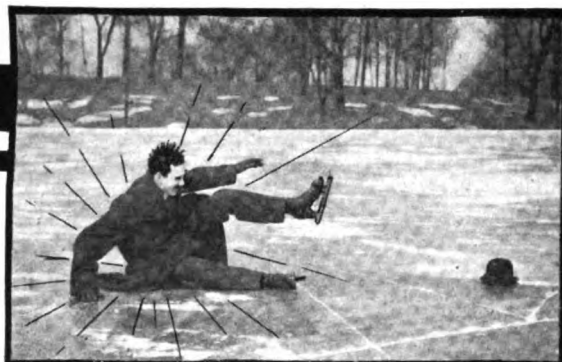
**Special—10 Days' Trial Coupon—Mail today**

A. D. JOSLIN MFG. CO., 225 W. Erie St., Chicago.

Please send me Cosmo Time Stamp on 10 days' trial. At end of 10 days I will remit the price, \$7.00, or return the Time Stamp.

Name .....

Address .....



## No Jarring Sensations!

Automobilists experience no jarring or bumping sensations when they are riding in comfort on Ford equipped

# W. & C.

### Original Double Arm Shock Absorbers

These stock absorbers put comfort in riding; they will readily appeal to your customers.

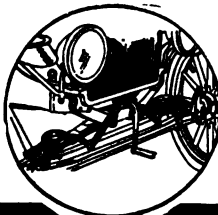
If you are stocked up with

### W. & C. Shock Absorbers

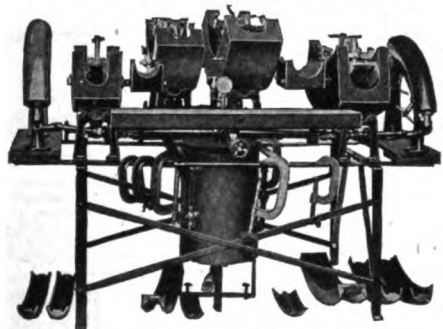
you can cash in on the demand for same

Write for interesting dealer's proposition

**Phillip H. Webber & Co.**  
HOOPESTON, ILL.



## Vulcanizing With a Vanderpool Vulcanizer Brings Big Profits



3 Cavity Combination Vanderpool Vulcanizer

Here is an exceptional opportunity for Garages as well as Vulcanizing Companies to secure a vulcanizer that will turn out high-grade work at a small cost. The fuel saved alone, will pay for the machine in a short time—then you will “cash in” on your investment. This plant, the Vanderpool Vulcanizer, is meeting with enthusiastic approval of hundreds of satisfied users all over the country. Unsolicited testimonials from the various companies now using the “Vanderpool” testify to the dependability, efficiency and economy of this “Vulcanizing Wonder.” One man writes that the “first month's profits paid for the plant.” No experience needed—we teach you. It occupies very little floor space, and “once bought, you will never have to buy again.”

Send in this ad with your name and we will mail catalogue and prices.

**VANDERPOOL COMPANY**  
Box 33 SPRINGFIELD, OHIO

## Here's Your Chance for a Cleanup



The Only Way  
To Cleanup  
**AUTOMOBILE  
CURTAIN WINDOWS**

Removes Dirt, Scratches and Discolorations from the Celluloid (Mica or Isinglass) Windows in Front, Side and Back Curtains.

Retails at 50c the Can.

## A BIG PROFIT CLEAN-UP FOR YOU

Write at Once for Details

**Celluloid Cleanser Company**

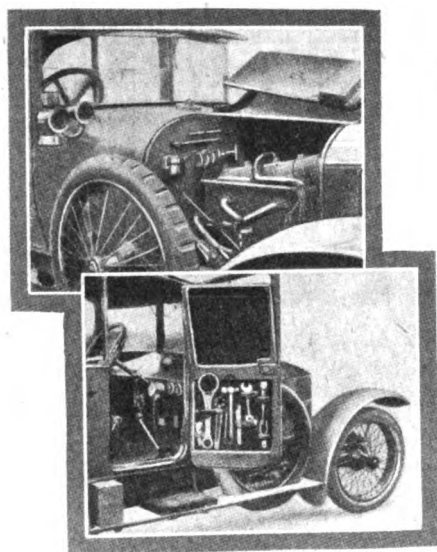
Tower Building, Chicago, Ills.



### New Method of Carrying Tools.

Some car owners find the tool box on an ordinary automobile in the way and complaints of this character have caused enterprising garage and shop men to devise methods for carrying tools which will obviate this difficulty.

The two illustrations tell the story of how an ordinary kit of tools for a car can be carried, in the one instance on



the front of the dashboard of the car, and in the other instance under the flap of upholstery on the inside of the car door. These tools should be so attached as to render them easy of removal when needed and yet held sufficiently tight as not to rattle when the car is in motion.

### Buob & Scheu Forced to Enlarge.

Buob & Scheu, Cincinnati, Ohio, have been forced to double their factory space to care for increased business. A list of their products reads like a catalogue of automobile accessories, but each was a natural outgrowth of their established business.

The firm specializes in covers of all descriptions, one man tops, Ford tops, truck tops, seat covers, dust hoods, kicker pads, curtains, cushions, tires, tubes, Ford wheels and fenders and anything related to any of the above.

Dealers find it impossible to carry a good accessory line which does not include Buob & Scheu products and the firm now is making it worth while for dealers to carry the quick-moving specialties and to sell other products from its catalogue. Garagemen, auto dealers and accessory dealers are requested to write Buob & Scheu for particulars.

Enthusiasm is the motive power of life. It helps one to get acquainted with himself. It gives him a peep into the mountain of his great unrealized possibilities.

## The Markets

**General.**—The market changes during the past month have been many, occurring daily, and for the most part were advances, but they may best be described as routine, none of them standing out prominently and calling for special comment. The feature of the buying movement has been orders for seasonable supplies, indicative of a boom opening of the spring motoring season. The volume of trade is most satisfactory and is reported by leading jobbers and manufacturers as registering a 15 to 20 per cent increase over the corresponding weeks of last year.

**Scrap Metal.**—This is a fairly active market, demand ruling steady. The war

situation has unfavorably affected the speculative market. Wholesale dealers are paying garagemen for supplies the following prices:

Heavy copper, 28@28½c; heavy copper wire, 28@28½c; light copper, 24½@25c; red brass, 24½@25c; red car boxes, 21@21½c; brass clippings, 19½@20c; red brass borings, 22@22½c; yellow brass turnings & borings, 17½@18c; heavy brass, 19@19½c; light brass, 15½@15½c; medium brass, 16½@16½c; auto radiators, 13@13½c; zinc, 8@8½c; lead, 8@8½c; lead dross, 5@5½c; battery plates, 5½@6c; No. 1 pewter, 34@35c; block tin pipe, 45@46c; tin foil, 37@38c; solder joints, 10½@11c; old nickel, 18@19c; new aluminum clippings, 47@48c; aluminum borings and turnings, 21@23c; cast aluminum, 34@34½c; mixed babbitt scrap, 9½@9½c; copper shells, 8@8½c.

## MARSHALL FIELD & COMPANY

ANNEX - THE STORE FOR MEN

### Motor Car Accessories for Cold Weather

Any device that adds to the pleasure and comfort of winter motoring finds a ready welcome with most car owners. In our Motor Utilities Exhibit are many such devices which are well worth investigation.

We list herewith a few practical suggestions:

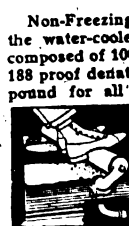


**Lehmman Charcoal Heaters**, gray, dark green and dark blue colors. Give a sustained heat of from six to eight hours. Price, with fuel, 20 inch, \$6.00; 14 inch, \$4.75.

**Radiator and Hood Covers** for all makes of cars, made up of good, serviceable, well-lined fabrics, \$3.75 to \$5.00. For Ford cars, \$1.00.



**Electric Automobile Heaters**, for use in electric cars only; nickel finished, easily attached. Price, 80 volt, \$6.00; Price, over 80 volt, \$7.00.



**Non-Freezing Solution** is a necessity for the water-cooled motor. This solution is composed of 100% pure white glycerine and 188 proof denatured alcohol. An ideal compound for all extremes of cold weather. Price, per gal. can, \$1.25.

**Automobile Exhaust Heaters**, for limousine or coupe, highly polished, nickel finished, \$7.50 to \$25.

We have on hand a full line of Motor Ropes consisting of steamer rugs, mohair plush, silk plush, rubber lined and various other styles, thereby insuring an ample range for selection. \$3.85 to \$75.00.

Motor Utilities Section, Fifth Floor

**Radiator and Garage Heaters**, burn kerosene and circulate a current of warm water through motor. Price, each, \$25.00.



**Electric Hand Warmers**, which attach to the steering wheel and connect direct with the battery. Keep the hands warm in the most severe weather. For Ford cars, \$5.00.

**Electrically-Warmed Gloves**. Distribute the heat throughout the fingers and back of the hands. Gauntlets, pair, \$10.



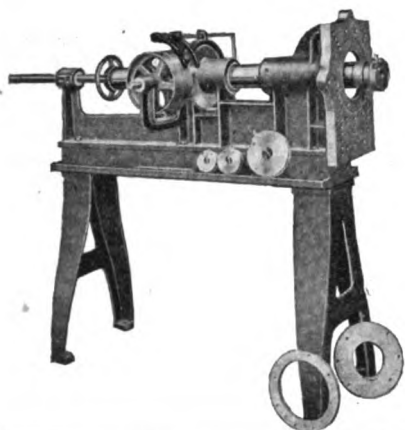
**Pennmotor Zero Oil** is especially refined for winter use. It has been subjected to the most rigid chemical tests and has been brought to a consistency that makes it an effective lubricant in zero weather. Gallon can, 75c; Five-gallon can, \$3.25.

**Foot Muffs**, for use in open or closed cars, for driver or passengers. Several styles. Pair, \$4.50 to \$12.25.



Using prices in advertising without resorting to Cheap-John, cut-price tactics.

# There is no other Cylinder Reboring Machine like the **MARVEL**



Without question the most efficient, rapid, easy to operate, simple, and inexpensive device ever offered for the purpose of trueing automobile cylinders.

Should be in every repair shop.

Pays for itself in a remarkably short time.

Often increases the repair business as much as 100% in two or three months after installation.

Will handle any type of cylinder block from one to twelve cylinders, of from three to eight inches in diameter.

For full particulars, price and terms, write the

**MARVEL  
MACHINERY  
COMPANY**

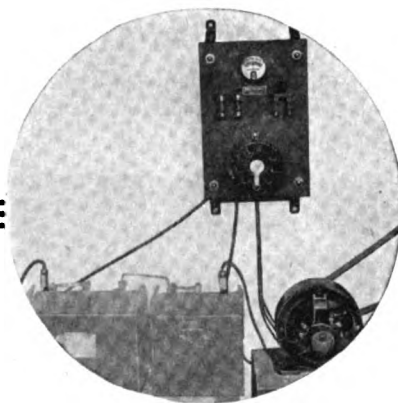
610 Boston Building  
MINNEAPOLIS, MINN.  
Department No. 9

**Bigger**

**Better**

**Profits**

**Service**



## MAIN Battery Chargers

Put your battery charging business on a profit making basis. In charging batteries from your lighting circuit most of your profit is consumed in the resistance necessary to reduce the voltage.

MAIN Battery Chargers eliminate this waste—make you independent of your lighting circuit—increase your profits—and render a valuable service to your customers.

The Main Battery Charger generates its own electricity and can be driven by any power in use, with little or no operating expense, making your receipts for battery charging almost net profit.

Price \$55.00

Prompt Delivery

**MAIN ELECTRIC MFG. CO.**  
PITTSBURGH, PA.

## *Jobs Await Skilled Mechanics in Detroit Factories*

☞ Come to Detroit—Five Dollar a Day Jobs waiting for skilled mechanics.

☞ We teach you the business in 100 hours—a new and practical system.

☞ Endorsed by all of the leading automobile factories.

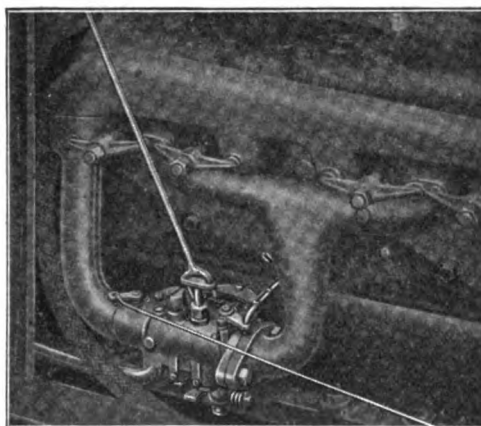
Terms to deserving applicants

Get particulars

**Machinist Training School**  
140 East Fort St. :: DETROIT, MICH.

## Model N Marvel Carburetor

Designed especially for Ford Cars.  
Fits right in place of regular installation, no changes whatsoever.



Model E Marvel Carburetors are standard on Buick, Olds, and Oakland.

Model E Marvel Carburetors greatly improve Overland and Studebaker cars. Catalog on application.

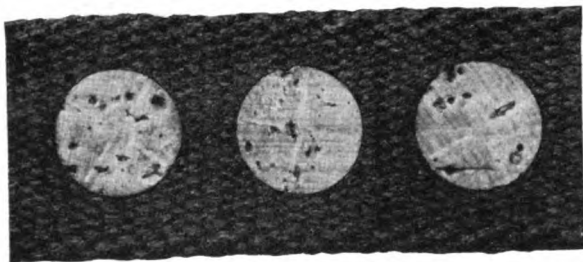
Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retail for \$8.00 complete.

**MARVEL CARBURETOR COMPANY**  
FLINT, MICHIGAN, U. S. A.

## Unique Transmission Lining for Fords.

The secret of the smooth operation of the larger cars and trucks has been traced largely to the introduction of cork in the

sale, dealers finding it both a satisfactory article and one that furnishes a good profit. Terms and particulars can be had by writing Advance Automobile Accessories Corp., 56 East Randolph St., Chicago.



Cork Transmission Lining.

multiple disc—the cone-faced clutch in common use on these vehicles.

This idea has been adapted to use in the planetary transmission, or that which is in common use on the Ford car. A high grade, non-metallic substance is used as the base and inserted at regular intervals is another non-metallic substance which is allowed to protrude slightly and which substance has a greater co-efficiency of friction than has the base. Circular pieces of cork inserted in high grade, imported transmission fabric are being used at the present time and from the most severe road and shop tests is giving more satisfaction than the inventors and engineers thought it was capable of giving.

Cork transmission lining is having a large

## Gordon Starts Advertising Campaign.

The J. P. Gordon Co., Columbus, Ohio, has fairly earned its high standing as a manufacturer of seat covers, tire covers and other fabric specialties for automobiles.

It has 800 jobbers and thousands of dealers handling its product and will now begin an advertising campaign to more fully acquaint the public with its merits. Beginning with a full page in the Saturday Evening Post of March 24, and with a liberal use of space in such other national media as Life, The Literary Digest, Collier's and Leslie's Weeklies, Cosmopolitan, Metropolitan, McClure's and Hearst's Magazines, car owners will be

made more fully acquainted with their needs for these specialties, with a resulting benefit to the jobbers and dealers.

## New Distributers for HAL-Twelve.

The Hal Motor Car Company, of Cleveland, Ohio, announces the appointment of the Central Garage of Asheville, North Carolina, as HAL-Twelve distributers for the western half of North Carolina and the northwestern section of South Carolina. Besides handling the HAL-Twelve, the Central Garage has the selling rights of the Chandler, Chalmers, Saxon and Jeffery.

## Auto School Faculty Are Engineers.

The high standard of instruction given at the Michigan State Auto School is indicated by the fact that nine of the fifteen instructors are members of the Society of Automobile Engineers.

A. G. Zeller, president of the school, is making a life work of training men for the "biggest business" and takes particular pride in the ability and serious purpose of his corps of instructors. The work is divided into departments so that students advance by easy stages as they become proficient.

Faculty meetings are held weekly, new developments in automobile engineering and practice being discussed, as well as ways and means of turning out better automobile men.



## Edison Alkaline Lighting and Ignition Batteries

**Batteries and Supplies**  
carried in Stock at our

## Service Station

Every Garage Owner should have information about the Edison Battery on his desk.

Write us.

**EDISON STORAGE BATTERY CO.**  
Orange, N. J.

Chicago Address: 2025 Michigan Avenue

## Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

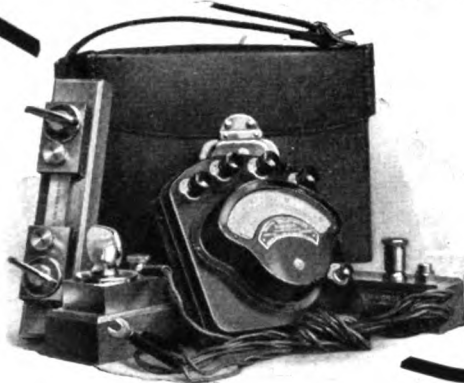
Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.  
Main Office, Leavitt St. and Jackson Blvd.

**Pondelick Brothers,** CHICAGO ILLINOIS

## Don't Send Your Customers to Another Garage!



If you cannot repair electric starting and lighting equipment intelligently, your customer will go elsewhere for this service. He will take the rest of his trade with him. There is more money in electrical repairs than in any other department of the garage business. The demand is enormously increasing.

# Weston

Model 280  
**GARAGE TESTING INSTRUMENT**

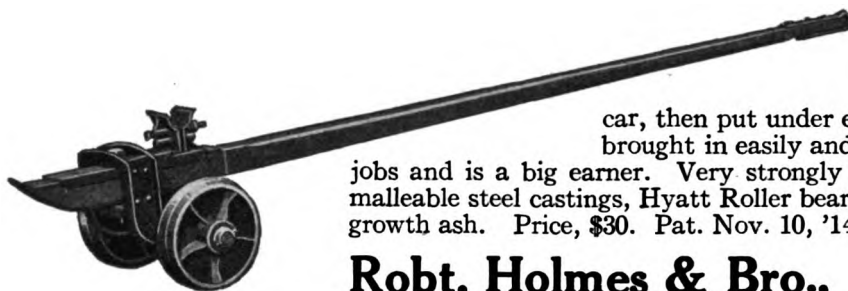
is the best, the most reliable and therefore the cheapest electrical equipment for you. It enables you to determine promptly and accurately the condition of the electrical equipment of any automobile, just where the trouble is and just how to remedy it.

Write for our *Special Proposition*.

**Weston Electrical Instrument Co., 30 Weston Ave., Newark, N.J.**

23 Branch Offices in the Larger Cities

## Hundreds of Garagemen Use the Holmes Wrecking Truck



It is just what they need for bringing in wrecked cars. The truck is used as lever to raise the car, then put under either axle and any size car can be brought in easily and quickly. Brings lots of profitable jobs and is a big earner. Very strongly made, having frame and wheels of malleable steel castings, Hyatt Roller bearings for wheels, and tongue of second growth ash. Price, \$30. Pat. Nov. 10, '14. Discounts to dealers and garages.

**Robt. Holmes & Bro., - Danville, Ill.**

### Announcing the "SEAL-TITE" PISTON RING

Unquestionably the simplest, most accurate and efficient piston ring on the market. A One-Piece, High-Compression Ring. Dealers, get busy and secure the profitable agency for the Seal-Tite Ring which will assure "more" power, perfect compression and lubrication. Sample and Descriptive Literature upon request.

SEAL-TITE PISTON RING CO., Inc., 1704 E. Lake St., Minneapolis, Minn.



## MONOGRAM OILS and GREASES QUALITY SERVICE

Used exclusively and recommended by more manufacturers of automobiles than any other oil on the market.

**THE MAKERS of MONOGRAM**  
*New York Lubricating Oil Company, New York*  
BRANCHES IN PRINCIPAL CITIES

## AUTO TOPS FOR ALL CARS

**AUTO TOPS**  
SEAT COVERS TOP COVERINGS

FORD ONE MAN TOPS  
Seat Covers for All Cars  
Top Coverings for Any Car  
Tops Made to Fit Any Car

**WE CAN SAVE YOU MONEY**

**BUOB & SCHEU**

201 Webster St., Cincinnati, Ohio

ESTABLISHED  
33 YEARS

ONE MAN TOPS  
FORD TOPS  
TRUCK TOPS  
SEAT COVERS  
DUST HOODS  
KICKER PADS  
TOP COVERINGS  
AUTO CURTAINS  
CUSHIONS  
AUTO TIRES  
AUTO TUBES  
RADIATOR COVERS  
HOOD COVERS  
DRIVER CUSHIONS  
FORD WHEELS  
FORD FENDERS

SINGLE ROW

DOUBLE ROW



THRUST

ROLLER

**REGROUND—NEW—EXCHANGED  
STEEL BALLS**

Satisfaction Guaranteed

1919 Michigan Avenue - CHICAGO

—ALSO—

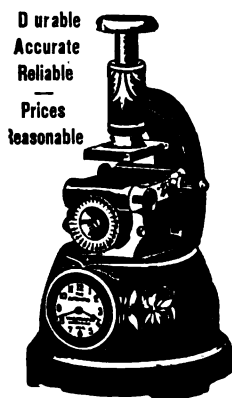
Philadelphia

Frankford, Pa.

Boston

New York





Durable  
Accurate  
Reliable  
—  
Prices  
Reasonable

## Be "Time Wise" and positively know the cost of every Automobile repair job and check your workmen's time

By the use of the **Automatic Time Stamp**, a thoroughly practical and comparatively inexpensive mechanical Time Cost Keeping System may be installed which will give a correct, indisputable and automatic printed record of the exact time consumed or occupied in doing any job or piece of work.

A great many service stations use one or more of these machines and no automobile man can afford to carry on business without at least one **Automatic Time Stamp**.

We guarantee that its use will save time, money and annoyance, eliminate losses and increase profits.

**Descriptive Printed Matter and Sample Time Cost tickets free on application.**

### THE AUTOMATIC TIME STAMP CO.

Automobile Dept., 161 Congress Street, Boston, Mass.

Established 1880

*Originators of the Art of Printing Time Automatically*

Also, Makers of the Automatic Time Register, the Duragraph (Elapsed Time Recorder), and Time Recording and Computing Machines for all divisions of time and for all purposes.



The elapsed time recorder

## TIME RECORDS

OF

**Repair Jobs—Pay Rolls—Rentals**

Are Absolutely Accurate if Made by

### THE CALCULAGRAPH THE ELAPSED TIME RECORDER

Your Customers Are Satisfied—You KNOW What jobs Are Profitable—  
Your Workmen Are Relieved of Clerical Work.

**Send for Free Booklet W Illustrating a Complete Set of Forms for a Simple Time System for Garages**

**CALCULAGRAPH COMPANY, 1477 Jewelers Building, New York City**



### Ford Owners MAY NOW HAVE

- 1.—Bright Lights at all speeds.
- 2.—Permits successful independent operation of lamps, which means, you are never without light.
- 3.—Prevents premature burning out of lamps, due to excessive voltage.
- 4.—Permits the use of lamps from 6 to 9 volts—12 to 15 C. P.
- 5.—Permits the dimming of lamps to comply with City laws, where necessary.
- 6.—Permits Tail Light connection.
- 7.—Is not a transformer, therefore does not consume power within itself—will not injure the magneto.
- 8.—Is indistructible, fool proof, requires no further attention, once attached. Though an accessory, it is a necessity for safety.

The ASKE AUTOMATIC VOLTAGE REGULATOR controls "Bright Lights" at low speed.

**A decidedly attractive proposition to present to Ford owners.**

#### LABORATORY TEST:

- Running at 7 miles per hour—5 times standard light.
- Running at 10 miles per hour—3 times standard light.
- Running at 15 miles per hour—2 times standard light.
- Running at 20 miles per hour and over—constant light, with no danger of burning out lights through excess voltage.

ASKE AUTOMATIC VOLTAGE REGULATOR CO., Providence Bldg., Duluth, Minn.  
Write for dealers' prices and illustrated booklets



## Seven Miles More to a Gallon of Gas

That's what the Willard Super-Heater will give on a Ford. Intensely practical—can be attached in ten minutes. Outlast an automobile.

Through the introduction of superheated air into the standard Ford carburetor, by the WILLARD SUPER-HEATER, the gasoline is completely vaporized, securing the full efficiency from the gas and requiring less amount per charge; consequently more mileage per gallon.

### Good in Any Weather Indispensable in Cold Weather

**DEALERS:**—The high price of gasoline makes the Willard Super-Heater a necessity. Every Ford owner is interested—every Ford owner a live prospect.

Ask our Sales Department about our Agency proposition for open territory.

**Retail Price \$5.00**

**Willard Company**  
South Bend Indiana



**MR. AUTO  
OWNER**  
SAVE TIME,  
TROUBLE and  
WORRY

By testing  
your Spark  
Plugs with the



## PERKINS SPARK PLUG TESTER

Locating any trouble instantly without removing the Spark Plugs. GET THE BEST RESULTS FROM YOUR SPARK PLUGS—SEE THAT THE GAPS ARE UNIFORM—LIKE THE GAP IN THE TESTER. Try the Tester—if the plug is O. K. a good fat spark will result, but broken porcelain or fouled plug will not show spark.

Write today for sample for 75 cents. Send post-office or express order. A good seller and profitable proposition for dealers.

1777 Broadway

**A. D. PERKINS**

New York City



## GARAGE AIR TANKS

Scaife Copper-Brazed Tanks will hold air indefinitely without loss of pressure.

Copper-Brazed Tanks are made only by our company.

*Beware of Imitations!*

**Wm. B. Scaife & Sons Co.**

26 Cortlandt St.  
NEW YORK, N. Y.

First National Bank Bldg.  
PITTSBURGH, PA.

## GASOLINE STORAGE OUTFITS

If you wish catalogue and prices of the cheapest, safe and thoroughly reliable gasoline storage system on the market, write us.

**Wm. B. Scaife & Sons Co.**

New York Office:  
26 Cortlandt St.

First National Bank Bldg.  
Pittsburgh, Pa.

**MORE** { Power  
Speed  
**LESS** { Noise  
Gasoline  
Oil  
Carbon  
Trouble

If we regrind your cylinders and fit new pistons, we furnish our Oiltight Rings at no additional cost.

Write — West 2460  
or Phone

**GEO. H. BLETTNER**

216-218 S. Oakley Blvd. - - CHICAGO

## The PERFECTION CYLINDER GRINDER

will regrind all sizes of motorcycle and automobile cylinders. This grinder will fit on any ordinary engine lathe.

*Details on Request*

**WOOD & SAFFORD MACHINE WORKS**  
Great Falls, Mont.

## KENNEDY Auto Storage Covers

furnish efficient protection for cars in dead storage. They are made of strong, heavy paper, properly reinforced, and in standard sizes to fit any car.

Made only by

**The Kennedy Car Liner & Bag Co.**  
SHELBYVILLE, IND.

## MILEAGE GALORE

**Will Run 5,000 Miles and More**

These tires are of double thickness and have 12 plies of fabric; therefore no punctures, no blow-outs. They are rebuilt by our special process, vulcanized and double treaded.

30x3 ..\$4.50	32x3½..\$5.75	34x4....\$7.75
30x3½.. 5.50	33x4 .. 7.50	36x4.... 9.00

Other sizes in proportion. Write for prices today. Send \$1 deposit for each tire ordered, and we will send the tire, balance C. O. D., subject to your examination and approval before paying for same.

**CHICAGO DOUBLE TREAD CO.**

1235-39 South Wabash Avenue

CHICAGO, ILL.

## NEWS BULLETIN

### Disco Moves Into New Factory

The Disco Electric Starter Corporation of Detroit moved last week into its new factory. The production of the new Disco Two Unit Starting and Lighting Systems will be speeded up by the use of special labor-saving machinery, such as is found usually only in the largest automobile plants.

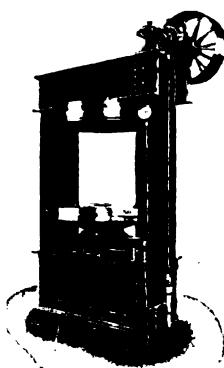
## DEALERS MAKE MONEY!

Get the Agency for the "Tonford" truck unit,—one of the quickest selling propositions you ever tackled. Attached to a Ford chassis, makes a one-ton truck. Light, strong, economical, easily handled. Drygoods merchants, furniture dealers, retailers in almost every line, bottlers, farmers, creameries, all want it. Find it best possible buy.

**\$325** **Tonford** **\$325**  
TRADE MARK

All the facts that sell the Ford, sell the Tonford. Highest grade truck attachment made—easiest to attach—strongest, most durable. Best constructed truck unit on market—lowest priced. Get busy now, while territory is still open. Write today. Learn how "Tonford" dealers pile up profits.

**DETROIT TRUCK CO., Mfrs., Detroit**



Tire Applying Press

### Hydraulic Arbor Presses

work easier  
than any  
others.

We make  
many sizes  
for many  
purposes.

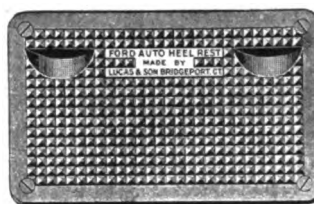


WRITE FOR CATALOG

**Lourie Manufacturing Co.**  
SPRINGFIELD, ILL.

## FORD AUTO HEEL REST

A GREAT CONVENIENCE TO MOTORISTS



Locates the heel for both clutch and brake pedals—gives the feet a comfortable resting place—protects the rubber mat.

Made of frosted aluminum. Will not flatten, wear through or tarnish.

A neat, useful footrest all car owners will appreciate. We also make the Auto Heel Rest used extensively in other cars.

Dealers, send for circular and trade discount.

Made Only By

**J. L. LUCAS & SON, Bridgeport, Conn.**

**MP PISTON RINGS**

**For Every Car**

YOU need only one kind of piston-ring in stock—the M-P. One-piece; concentric; leak proof. Made of close-grained grey iron, accurate to one one-thousandth of an inch. Simple lock-joint never leaks compression.

**STOCK M-P PISTON - RINGS**

and watch your customers register satisfaction. Write today for dealer's terms.

**THE METAL PRODUCTS CO., St. Louis, Mo.**

**WALL'S CYLINDERBORING and PISTON SERVICE**

Twenty years' experience of high class automobile work of our President, Mr. Wall, enables us to render an expert service in auto machine work of all classes. Every job has Mr. Wall's personal supervision—every mechanic an expert.

Prompt Service  
Reasonable Charges

**Wall Machine & Mfg. Co.**  
4513-15 Lincoln Ave.  
CHICAGO, ILL.

## UNITED FLEXIBLE METAL LINED GASOLINE AND AIR HOSE

Use UNITED Flexible Metal Lined GASOLINE HOSE and UNITED Flexible Metal Lined AIR HOSE and bring your station up to the ACME in EQUIPMENT. UNITED Flexible Metal Lined GASOLINE HOSE has been approved by The Board of Fire Underwriters. The largest Oil Companies, Garages and Filling Stations in the country are using our Gasoline Hose. We manufacture our hose in all sizes and attach couplings to fit any make of pump. Send us your requisitions and let us supply you with THE HOSE of the LONGEST SERVICE.

**UNITED METAL HOSE CO.**

510 W. 24th Street

NEW YORK CITY

**S-M-C**

See the "S-M-C" on each roll of **BRAKE LINING**

before you buy. Always important, but doubly so now when rising costs of materials lead some to cut the quality.

S-M-C is still the same dependable brake lining—unaffected by heat, oil, water or gasoline. Will not crumble or glaze. Takes hold quietly but positively.

**\$1.50 Ford Set**

—complete with three proper lengths for transmission and all rivets required. For sale by wideawake dealers. If your dealer hasn't it, send his name and \$1.50—we'll send it direct, postpaid.

**STAYBESTOS MFG. CO.**  
The "Modern" Factory  
5518 Lena St., Germantown, Philadelphia, Pa.

**\$1.50** equips Ford car

# PACO

**The ORIGINAL RACING BODY for FORDS**

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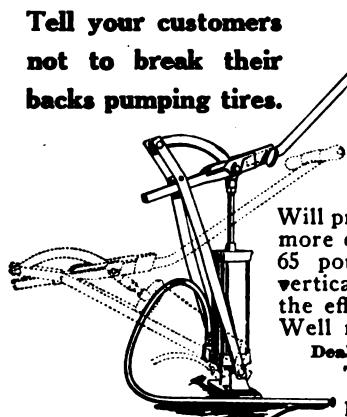
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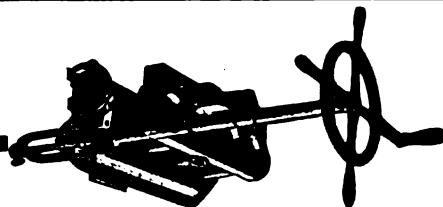
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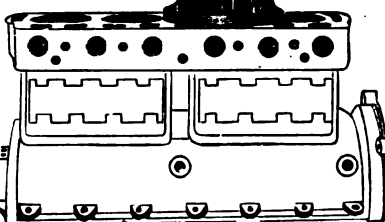
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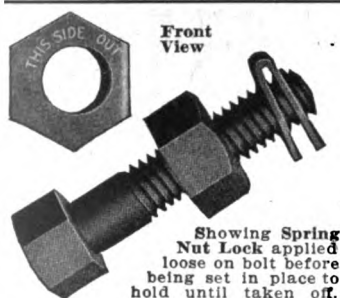
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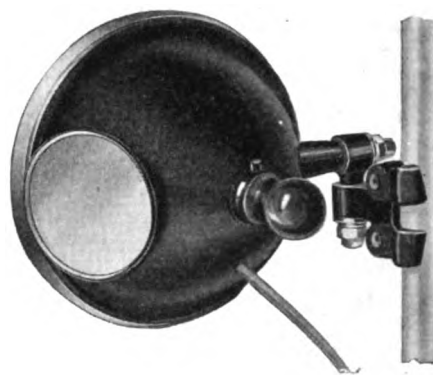
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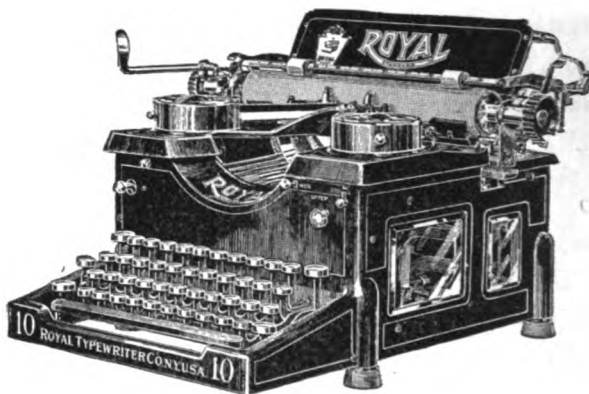
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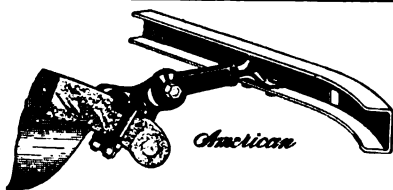
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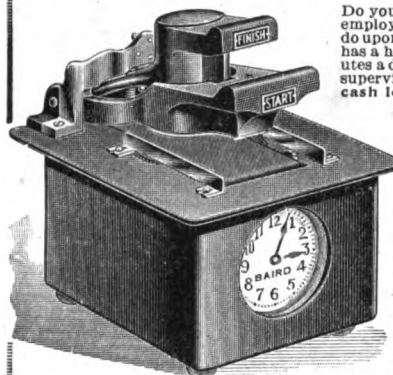


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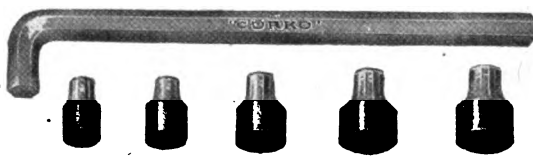
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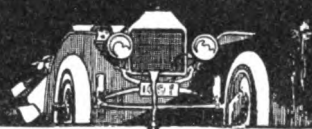
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Willard Company, South Bend, Ind.

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Thomas J. Harton & Co., Inc., 212 Church St., New York.

## GASOLINE STORAGE AND PUMPING SYSTEMS

The American Oil Pump & Tank Co., Cincinnati, Ohio.  
 Wm. B. Scaife & Sons Co., Pittsburgh, Pa.

## GASOLINE TANKS

The American Oil Pump & Tank Co., Cincinnati, Ohio.

## GASOLINE TESTERS

M. A. Levy Co., Chicago.

## GEARS

William Ganschow Co., 1002 W. Washington St., Chicago.

## HEATERS

Willard Company, South Bend, Ind.  
 Garford Mfg. Co., Elyria, Ohio.

## HOSE—TUBING

United Metal Hose Co., New York, N. Y.

## HYDRAULIC PRESSES

Louie Mfg. Co., Springfield, Ill.

## IGNITION

Imperial Brass Mfg. Co., 529 S. Racine Ave., Chicago, Ill. (Imperial Primer.)

## LATHES

Marvel Machinery Co., Boston Block, Minneapolis, Minn.

## LUBRICANTS AND OILS

New York Lubricating Oil Co., New York City.  
 Standard Oil Co. (Indiana), Chicago, Ill.

## MAGNETOS

I. Wolf Auto Parts & Tire Co. (Bosch), 619 N. Illinois St., Indianapolis, Ind. (Used Bosch Magnets.)

## NUT LOCKS

Spring Nut Lock Co., 643 Transportation Bldg., Chicago.

## PAPER PRESSES

Chicago Baling Press Co., 305 S. La Salle St., Chicago.

## PEDAL PADS

Geo. H. Rives Mfg. Co., Woolworth Bldg., New York City.

## PISTON RINGS

Detroit Piston Ring Co., Detroit, Mich.  
 Ever-Tight Piston Ring Co., 1431 Chestnut St., St. Louis.  
 Keys Piston Ring Co., 3008 Olive St., St. Louis.  
 The Metal Products Co., St. Louis, Mo.  
 Butler Mfg. Co., Indianapolis, Ind.

Inland Machine Works, 817 Mount St., St. Louis.  
 Pondelick Bros., Leavitt St. and Jackson Blvd., Chicago.

## PUBLISHERS OF TECHNICAL BOOKS

American Technical Society, 58th St. and Drexel Ave., Chicago.

## PUMPS

Detroit Accessories Corporation, Detroit, Mich.  
 The W. H. Howell Co., 10 State St., Geneva, Ill. (Jensen Tire Pump.)  
 Danvers Specialty Co., Danvers, Ill.

## SEARCHLIGHTS

Aske Automatic Voltage Regulator Co., Duluth, Minn.

## SHOCK ABSORBERS

Auto Device Sales Co., Plymouth, Ind.  
 Philip H. Webber & Co., Hoopston, Ill. (W. & C.)

## SIGNS

Commonwealth Edison Co., 72 W. Adams St., Chicago, Ill. (Federal Electric Signs.)  
 Flexume Sign Co., 1450 Niagara St., Buffalo, N. Y.  
 Dawes Electric Sign Mfg. Co., Pittsburgh, Pa.

## SOLDERING FLUX

M. W. Dunton Company, Providence, R. I.

## SPARK PLUGS

Hilborn Company, Inc., 531 Canal St., New York City (The Answer Spark Plug).  
 Twin Fire Spark Plug Co., 658 Woodward Ave., Detroit.

## SPARK PLUG TESTER

M. A. Levy Company, Chicago.  
 A. D. Perkins, 1777 Broadway, New York City.

## SPOTLIGHTS

Aske Automatic Voltage Regulator Co., Duluth, Minn.

## SPRINGS

Garden City Spring Works, 2300 Archer Ave., Chicago.  
 Higgins Spring & Axle Co., Racine, Wis.  
 The Edward F. Lyon Co., Woodward Ave. and Antoinette St., Detroit, Mich. (Self-Lubricating).  
 Tuthill Spring Co., 760 Polk St., Chicago (Tuthill Lubricated Titanic Springs).

## STARTING SYSTEMS

Disco Electric Starter Corporation, Detroit, Mich.  
 H. B. Weber & Co., 1336 Michigan Ave., Chicago.

## STORAGE OUTFITS

American Oil Pump & Tank Co., Cincinnati, Ohio.  
 Wm. B. Scaife & Sons Co., Pittsburgh, Pa.

## TESTING INSTRUMENTS

A. D. Perkins, 1777 Broadway, New York City.  
 Weston Electrical Instrument Company, Newark, N. J.

## TIME STAMPS

Beird Equipment Co., 324 W. Ohio St., Chicago.  
 Calculagraph Co., New York.  
 A. D. Joslin Mfg. Co., 225 W. Erie St., Chicago.

## TIRE PROTECTORS

The Tireold Co., 1200 Michigan Ave., Chicago.

## TIRE PUMPS

Imperial Brass Mfg. Co., 529 S. Racine Ave., Chicago (Wixom Hand Tire Pumps).

## TRACTORS

Parrett Tractor Co., 429 Fisher Bldg., Chicago.

## TRUCK UNITS

Commercial Truckmobile Co., 1006 Michigan Blvd., Chicago.  
 Smith Form-a-Truck Co., 1470 Michigan Blvd., Chicago.  
 Detroit Truck Co., Detroit, Mich.

## TRUNKS

Kamlee Co., 446 E. Water St., Milwaukee, Wis.

## TYPEWRITERS

All Makes Typewriter Exchange, 162 N. Dearborn St., Chicago.  
 Royal Typewriter Co., 304 Broadway, New York City.

## VALVES

A. Schrader's Son, Inc., 783-793 Atlantic Ave., Brooklyn, N. Y. (Automatic Inflating Valves).  
 Romort Mfg. Co., Seattle, Wash.

## VULCANIZERS

Vanderpool Vulcanizing Co., Springfield, Ohio.

## WELDING APPARATUS

Hercules Welding & Machine Co., 223 N. 16th St., Philadelphia, Pa. (Acetylene Welding and Cutting Apparatus).  
 So-Luminum Mfg. Co., 1700 Broadway, New York City.

## WRECKING TRUCKS

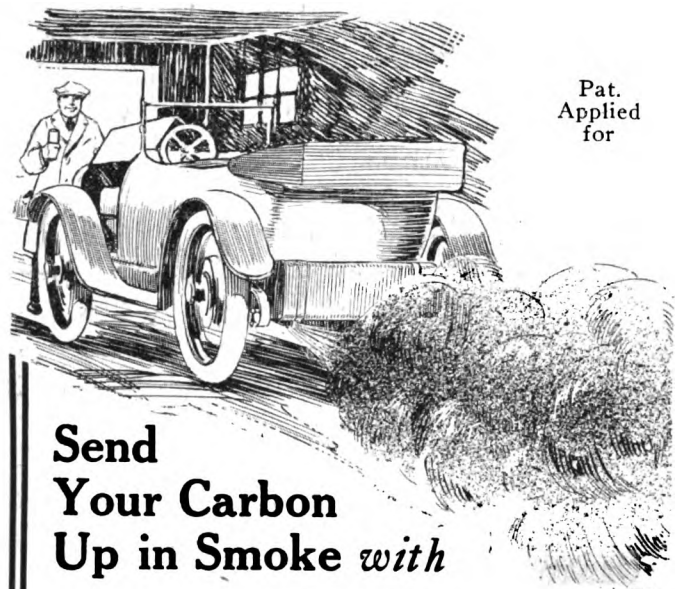
Robt. Holmes & Bro., Danville, Ill.

## WRENCHES

The Graham Roller Bearing Co., Condersport, Pa. ("Curko" Socket Wrenches).  
 Walden-Worcester, Inc., Worcester, Mass.

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Pat.  
Applied  
for

Send  
Your Carbon  
Up in Smoke with



AD-EL-ITE Motor Carbon Remover harms nothing but carbon. It quickly loosens up this clogged, harmful material and blows it out through the exhaust. It revamps the life of the entire car, cuts down motor troubles and repair bills.

Our Remover reduces gas and oil consumption from 12½ to 25 per cent, stops back-firing, "knocks" and increases power—puts your motor back into the hundred per cent efficient class.

It comes in convenient sizes from 1 to 1/16 gallon.

Stock this big seller—it is a sure-fire repeater.

Effective window display matter with promotional work done for you. Send for special proposition.



**ADAMS &  
ELTING CO.**

716-726 Washington Blvd.  
CHICAGO

TORONTO

NEW YORK

Use Coupon Below

Adams & Elting Co.

716-726 Washington Blvd., Chicago  
Enclosed find 85c for sample can of AD-EL-ITE Carbon Remover, sufficient to clean an ordinary motor twice—to be sent prepaid.

Name .....

Address .....

My accessory dealer is.....

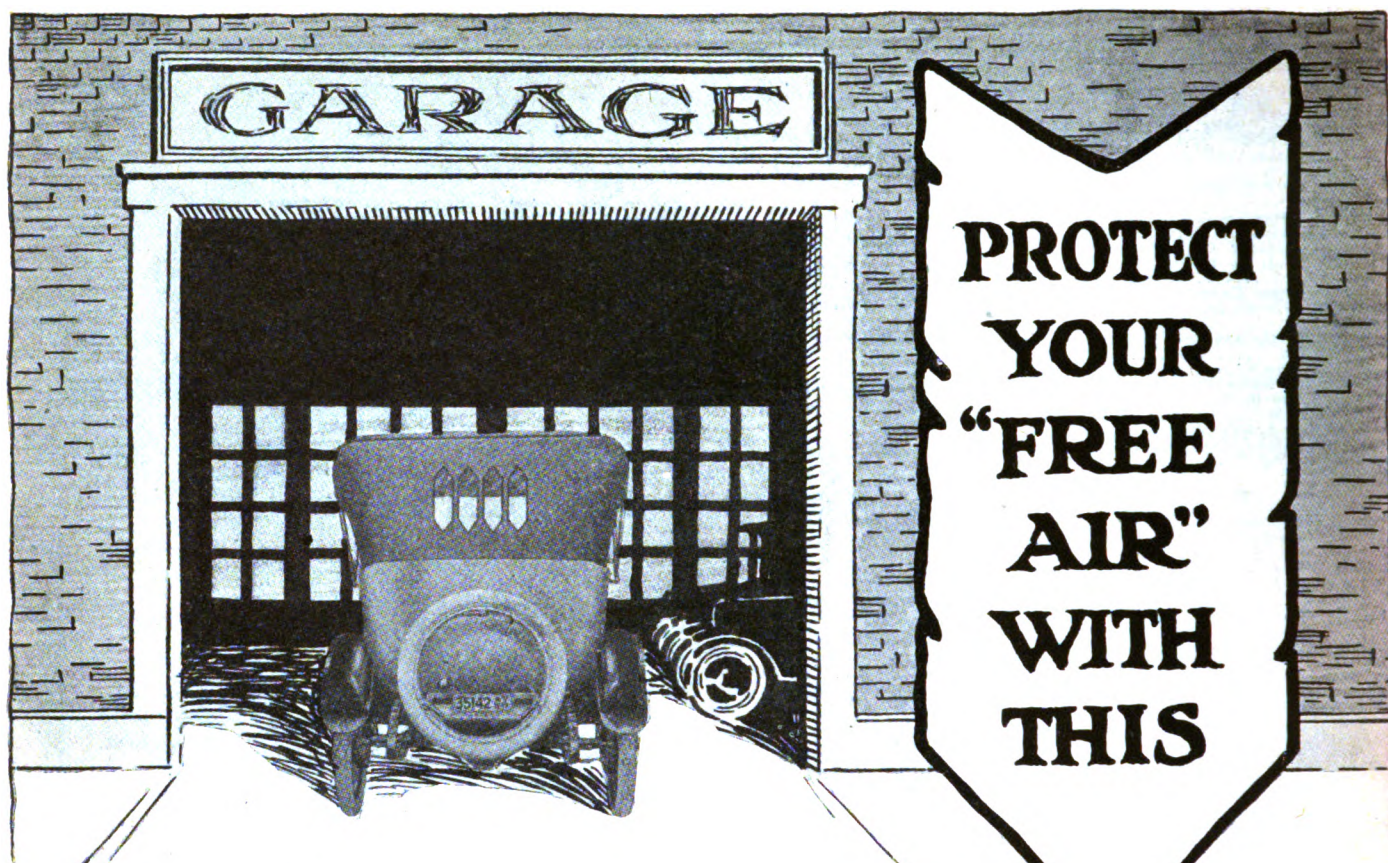
Write for book listing over four hundred styles and sizes of

**LYON SPRINGS**

We guarantee accurate fit and correct sizes. Save time and money by ordering from Lyon. Prompt shipments.

**Edward F. Lyon Company** 1283 Woodward Ave.  
DETROIT, MICH.





# SCHRADER UNIVERSAL INFLATING VALVE

Every successfully and efficiently operated garage, repair shop and agency station where "Free Air" is distributed should have a SCHRADER Universal Inflating Valve to prevent surplus air escaping after tires are inflated. The SCHRADER Valve automatically stops all air pressure the minute it is released from the tire valve. When the air is to be forced into the tire this is simply done by pressing the nozzle of the inflating valve against the tire valve.

Will fit any diameter of hose from  $\frac{1}{4}$  to  $\frac{5}{8}$  inch.

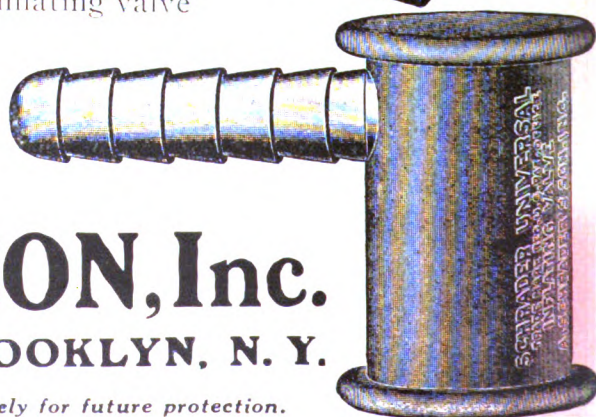
**PRICE \$1.00**

## A. SCHRADER'S SON, Inc.

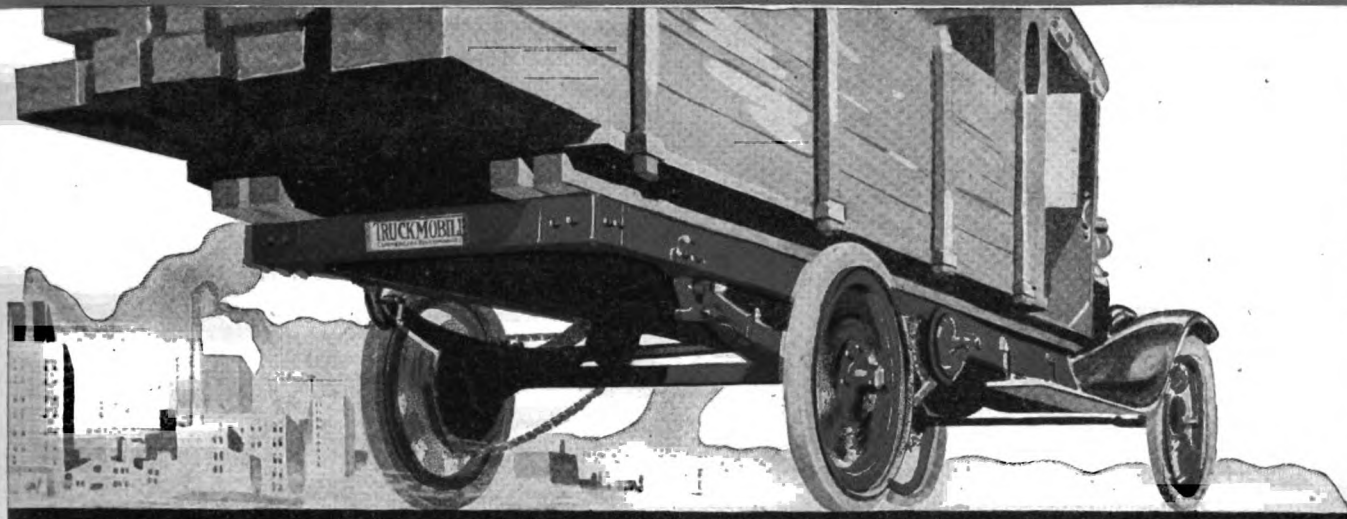
783-793 Atlantic Ave.

BROOKLYN, N. Y.

*Unless you have a SCHRADER Valve now, install one immediately for future protection.*







# TRUCKMOBILE

## A Sensational Success!

## Biggest of Them All!

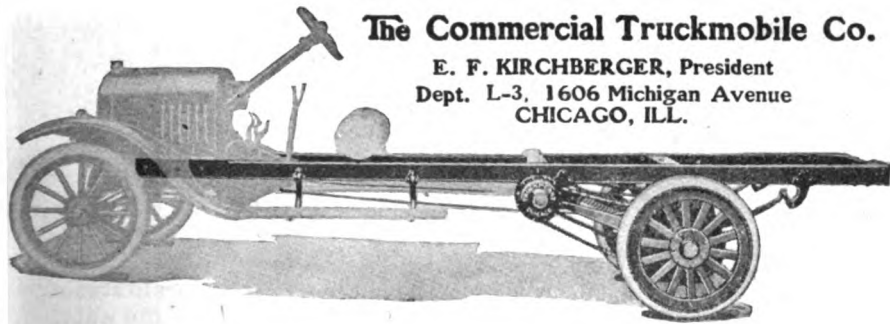
**T**HINK of it—more than forty different makes of truck attachments were striving for dominance when the TRUCKMOBILE swung into the arena a few short months ago. Today the TRUCKMOBILE stands as a nation-wide success, enjoying a prestige both among dealers and users that puts it in a class by itself.

This shows how quickly the trade and the market recognized the *standardization* of the truck attachment. "*Real truck engineering!*"—that was the instant verdict on the TRUCKMOBILE. It was seen at a glance that the TRUCKMOBILE took the truck attachment out of the makeshift class and gave it the perfection of which that wonderful idea was worthy.

We are going to push the TRUCKMOBILE success to greater and greater bounds. Our carefully planned advertising and sales work is going to bring TRUCKMOBILE delivery and hauling into every community.

The biggest dealers in the country are taking on the TRUCKMOBILE. We allow only one dealer in a territory to handle the TRUCKMOBILE, and you may rest assured that everybody in that territory has heard about him. If you have not heard of a dealer in your territory write at once for our proposition.

1. The TRUCKMOBILE has a longer wheel base—133 inches.
2. The TRUCKMOBILE rides easier under light as well as heavy loads, due to spring construction and long wheel base.
3. Less side sway to frame and body on TRUCKMOBILE—due to method of spring attachment.
4. Wider frame—41½ inches.
5. More massive construction.
6. Fewer parts.
7. Bell sprocket that can be attached in few moments—*keys onto jackshaft*.
8. Requires less time of dealer for making attachment to Ford chassis.
9. Load strain on axle properly distributed because side springs are nearer wheel center than on others.
10. Destroys none of the used or unused parts of Ford car.

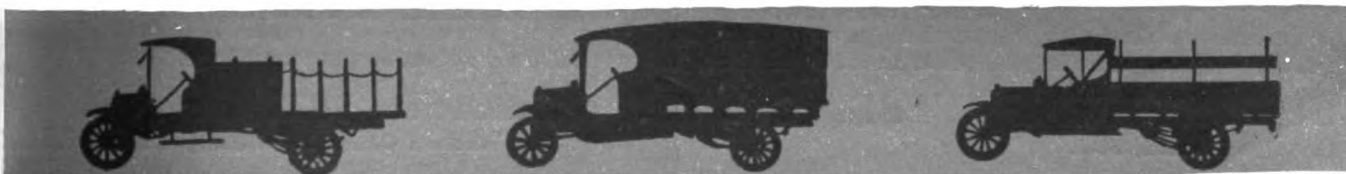


The Commercial Truckmobile Co.

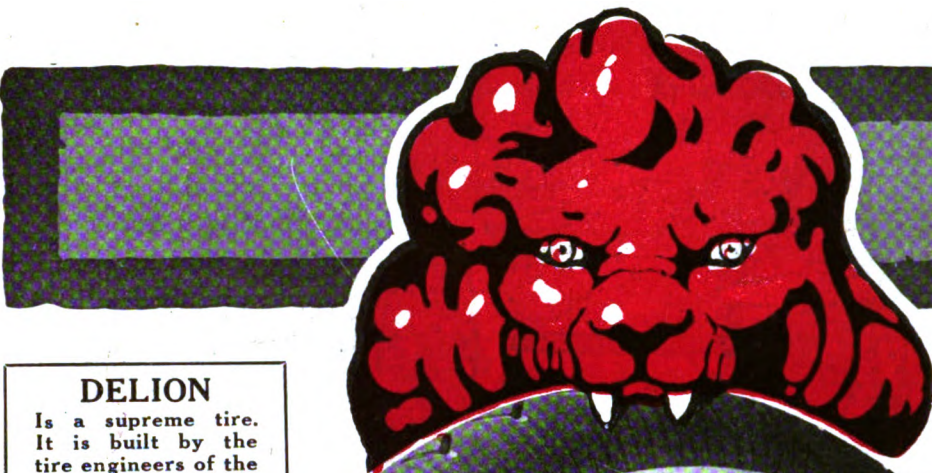
E. F. KIRCHBERGER, President  
Dept. L-3, 1606 Michigan Avenue  
CHICAGO, ILL.

# \$ 350

And a Ford Chassis  
(Old or New)







**DELION**  
Is a supreme tire.  
It is built by the  
tire engineers of the  
industry—the  
Throppes.

They use with their  
master skill, the  
finest raw materials  
that the market  
affords.

# DELION TIRES

**F**INEST Para rubber and toughest Sea Island fabric—the most modern manufacturing methods—single cure, wrapped tread, careful hand work, unremitting supervision and minutest inspection—the best labor—all combine to make a tire that we ask you to compare with the best shoe you know of—whether made here or abroad.

¶ The guarantee of 5,000 miles is merely nominal—it simply indicates the minimum mileage Delion tire buyers have the right to expect.

#### WE KNOW WHAT THE TIRE WILL DO

¶ In 1916 adjustments represented a disappearing fraction of one per cent.

¶ In 1916 every Delion distributor expressed himself as *sold solid* on Delion tires.

¶ In 1916 every Delion dealer made money.

¶ And in 1917 we are extending production to take care of the great increase in business. We  
*have already*  
*written.*

#### THERE IS SOME GOOD TERRITORY STILL TO BE HAD

¶ The Delion proposition means **CAPITAL** to the man or the organization who gets it. It will become a real property right to an energetic, experienced distributor.

¶ Exclusive territory, co-operation that moves the goods, adjustments in the distributor's control, a

5000 mile basis, an honest list, a profitable scale of discounts and a great tire—these are the outstanding, distinctive features of our selling plan.

¶ If you know how to make money for yourself, write for an option on your territory.

**DELION TIRE & RUBBER CO., Inc.** Main Office: 1922 Broadway, N. Y.  
Factory: Trenton, N. J. Western Office: 3449 Michigan Avenue, Chicago



# AMERICAN GARAGE AND AUTO DEALER



Volume 7  
Number 11

CHICAGO

APRIL, 1917

\$1.00 Per  
Year

## Russel

### Internal Gear Drive Axles

#### Your Truck Is No Better Than Its Drive Axle

The success of any motor truck is dependent upon the rear axle.

If it is called upon to carry the load and drive the truck at the same time, trouble is bound to occur sooner or later.

That is why the Russel Internal Gear Drive Axle is conceded to be the best motor truck axle built.

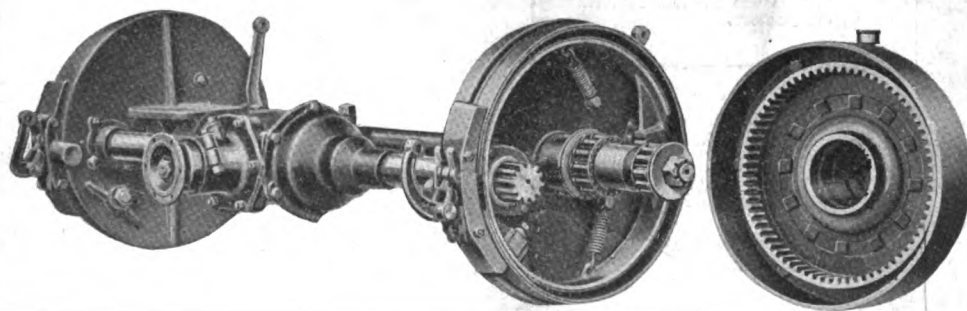
The load carrying axle is a one-piece chrome nickel steel round bar—admittedly the best design for carrying purposes,

The drive axle is separate, but rigidly connected to the round bar axle, leaving it free to drive the truck.

Durability, serviceability and economy with efficiency are positively assured with the Russel Axle.

Backed by Russel reputation, no motor truck buyer can afford to place his order for a motor truck without carefully investigating the merits of the Russel Internal Gear Drive Axle.

**Russel Motor Axle Company**  
North Detroit



TORRA  
+

FAIR LIST PRICES



FAIR TREATMENT

# GOODRICH

BLACK SAFETY TREAD TIRES

Underwritten by

**GOODRICH**

Good Faith

*You must get  
Full Value  
service from a  
Goodrich tire  
or Goodrich  
wants it  
back*

## Silvertown's Domination of 1916 Auto Racing

The 1916 automobile racing season brought forth amongst a half hundred Silvertown victories the following especial triumphs of the **ONLY two-ply, cable-cord** tire.

National Automobile Racing Championship, won by Dario Resta with 4100 points.

15,582 points scored toward the championship by Silvertown to 7,176 by ALL its competitors COMBINED.

Eighty per cent. of all the prize winning positions of A. A. A. sanctioned races, including

31 Firsts to 5 Firsts by All its competitors.

**T**HE Fair Treatment Guarantee—the *pledged* good faith of the B. F. Goodrich Company—takes the slightest shadow of a *risk* off Goodrich Black Safety Tread Tires.

You must get full value service from a Goodrich Tire, or Goodrich wants it back forthwith.

Then Goodrich FAIR TREATMENT steps up and squares the debt of that tire,—squares it gladly and generously with a liberal adjustment, *bound* to satisfy you.

For Goodrich accepts as the Company's *debt of honor* an obligation of tire service, worthy of the *best fabric tire made*.

There are no conditions, no catch words to Goodrich's world-wide invitation:

***"Send back to Goodrich  
ANY Goodrich tire you  
believe owes you anything."***

**The B. F. Goodrich Rubber Company**

**AKRON, OHIO**

Where You See This Sign  
Goodrich Tires are Stocked



Ask Your Dealer for Them

Also maker of the celebrated tires on which Dario Resta won the official 1916 National Automobile Racing Championship, Silvertown Cord Tires.

*"Best in the Long Run"*



# AMAZON TIRES

Handling a *better* tire means building a *bigger* business.

The Amazon Tire is an *improved* standard product—and the scientific, reinforced construction with the resultant *extra service*, offers an inducement that the consumer is quick to appreciate.

Amazon Dealers are prospering, for the Amazon Proposition includes all the essential elements for the dealer's success—and more.

Your territory may still be open—write us.



THE  
AMAZON  
RUBBER CO.  
AKRON





# HAVE YOU SEEN SNAPS?

## 34,000 Auto Supply Dealers, Garage Men and Repair Men Are Building Their Business With "SNAPS"

"SNAPS" is issued MONTHLY through the mails. 34,000 dealers are buying \$5,000,000 of auto supplies yearly from "SNAPS," the National Bargain Directory of Auto Supplies. "SNAPS" is the ONLY salesman of the Service Motor Supply Co., of Chicago, the fastest growing auto supply jobbing house in the country and we are doing this tremendous business because these wide-awake dealers are wise enough to realize that the many pages of "SNAPS" is crowded with the newest, fastest selling auto accessories at the lowest prices. "SNAPS" is for DEALERS only. No consumer can buy from "SNAPS," either by mail or in our Chicago Display Rooms. The Service Motor Supply Co. protects the dealer at every stage of the game. The dealer alone gets the advantage of the sensationally low prices on the high quality merchandise found in "SNAPS."

## HERE ARE THE REASONS OVER 34,000 DEALERS ARE BUILDING BIGGER BUSINESSES AND MAKING BIGGER PROFITS BY BUYING FROM "SNAPS"

The Service Motor Supply Co. buys for cash and sells for cash and sells by mail only. We cut out the expense of road salesmen. Unlike other jobbers, we don't have to tack on the cost of railroad fares, hotel bills and good cigars to the price of the goods our dealers buy.

UNCLE SAM carries our salesman, "SNAPS," for four cents, with no hotel bills to pay. That's why—together with our enormous purchasing power—we can positively protect our dealers against high prices. That's why dealers who buy from "SNAPS" are often able to re-sell goods at prices other dealers actually have to pay for them.

We don't ask you to take our word for these statements, but we ask you to put us to the test—to send right away for your copy of "SNAPS," and after you have turned its many pages, mail us a test order. Make it a small order if you like—but give us a chance to demonstrate our six-hour delivery service, quality merchandise and low prices.

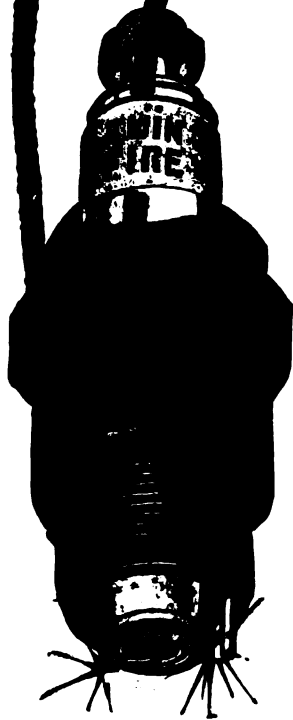
Hundreds of dealers are placing their first order from "SNAPS" every month. Thousands of dealers are buying and re-buying from "SNAPS" every month. You owe it to the success of your business to investigate "Snaps" now.

When you write for "SNAPS" be sure to use your letterhead so that we can tell you are a legitimate dealer; otherwise we cannot do business with you, because the Service Motor Supply Co. sells to dealers—and dealers only.

**GET YOUR REQUEST FOR "SNAPS" IN THE MAIL NOW!**

**SERVICE MOTOR SUPPLY CO. 1523-25-27-29-31 Michigan Blvd. CHICAGO, U.S.A.**

# 2 Distinct Sparks



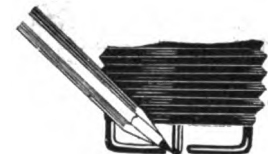
## TWIN FIRE

**I**T'S the only Spark Plug on the market that fires more than one distinct spark at the same instant. The number of firing points of other plugs **DOES NOT** determine the number of sparks, for if one point becomes clogged, all points are dead.

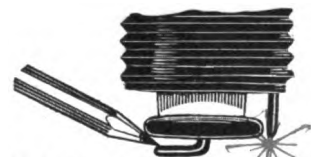
The Twin Fire Plug fires two series sparks. Foul one point and the other continues to fire—the hot explosions soon clean the fouled point. Each point fires independently of the other, but both sparking at the same time.

Twin Fire Laughs at soot and oil—it banishes spark plug trouble. Adds a world of “snap” to the motor—makes it get away quicker and pull harder on hills.

If you aren't now handling Twin Fire Plugs now's the time to begin. Motorists are demanding trouble-proof spark plugs and there is a sweeping favor of Twin Fire because of the exclusive features. Write or wire today for dealers' proposition—it's attractive.



Ordinary plugs are dead when even one point becomes clogged.



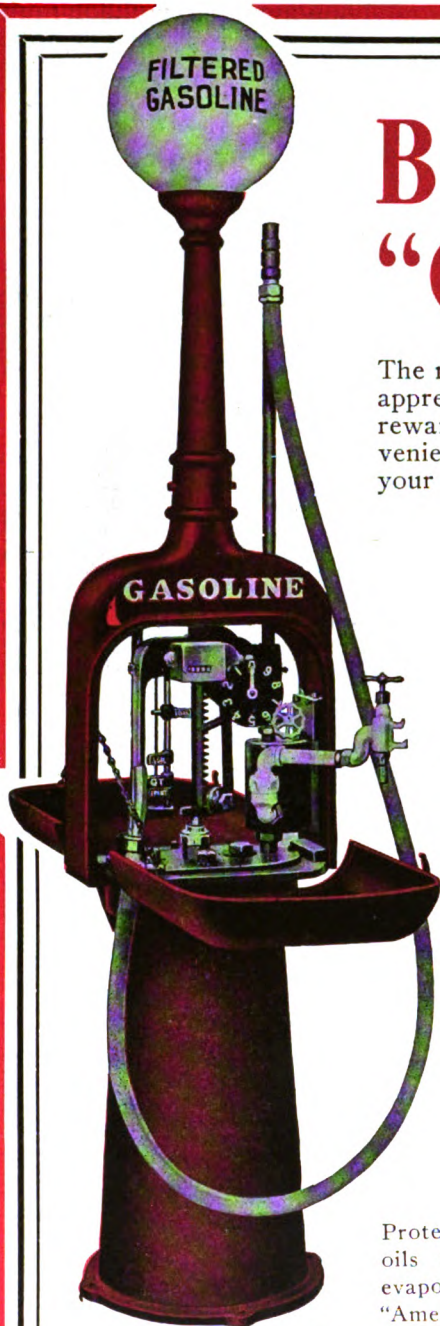
Twin Fire always fires. If one point clogs, the other continues uninterrupted. Banishes trouble.

# Twin Fire Spark Plug Company

658 WOODWARD AVENUE,

DETROIT, MICHIGAN





**Curb Pump No. 101**  
Patented.

Will pay for itself in a remarkably short while through time saved in delivering oil; preventing waste; accurate measurements, etc. Constructed of the best materials, and with the most painstaking care; handsomely finished in olive green. Standard capacity 65 gals.

Indispensable in public and private garages.

Write for bulletins on all styles of pumps, oil storage systems, etc.

**THE AMERICAN OIL PUMP  
& TANK CO.**  
CINCINNATI, OHIO

# BOOSTING YOUR "GAS" BUSINESS

The motorist is an impatient person; he is also an exacting one. He appreciates prompt, courteous, efficient attention, however, and will reward such attention with his continual patronage, even at an inconvenience to himself. It is this continual, repeat business that boosts your "GAS" sales.

## AMERICAN CURB PUMP No. 101

will enable you to give prompt, efficient and rapid service. Its **double acting, continuous flow** feature delivers 14 gals. per minute. The **accessible valve** feature assures a clean pump—accurate measurement—with minimum effort.

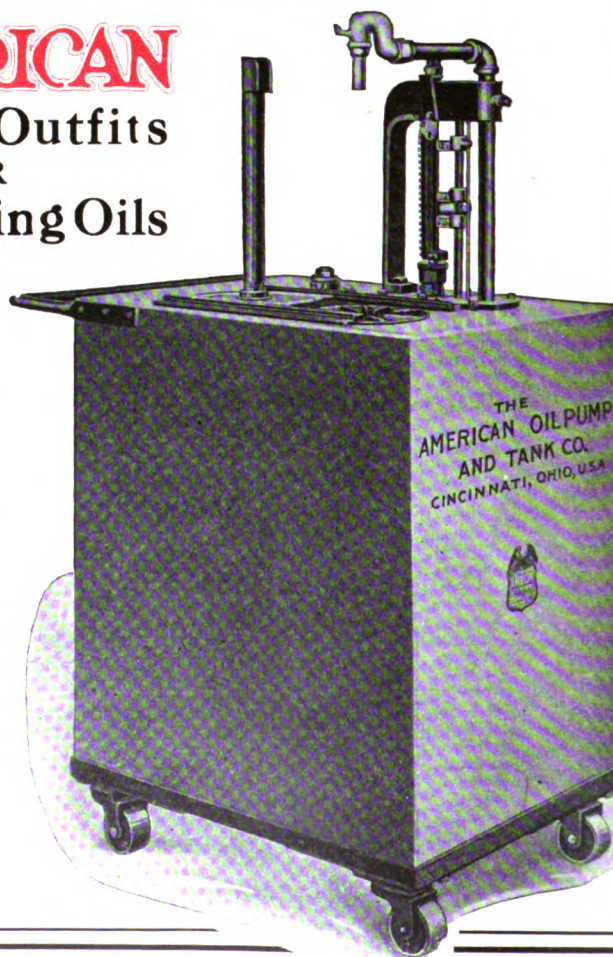
**Discharge register with large clock dial;** meter registering up to 100,000 gals., then repeating.

**Stand pipe and hose draining valve;** handsome electric light fixtures; "Filtered Gasoline" sign; **threaded quantity rod**, exclusive "American" feature insuring rigidly fixed quantity stops; impossible to change without removing seal on pump.

A pump honest to you and honest to your customer.

## AMERICAN Storage Outfits FOR Lubricating Oils

Protect your lubricating oils from dirt, leakage, evaporation, etc., with the "American Portable," or Stationary Storage outfit.



THE  
AMERICAN OIL PUMP  
AND TANK CO.  
CINCINNATI, OHIO, U.S.A.

# AMERICAN GARAGE AND AUTO DEALER

*Published Monthly*

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Guaranteed Circulation this Issue 15,000 Copies

# "NORMA" BALL BEARINGS

(Patented)



Dependability—isn't that the really essential quality in any car? Isn't dependability—so far as car performance is concerned—synonymous with pleasure-capacity and service-capacity? And doesn't dependability in the car as a whole demand dependability in every detail of construction and equipment? The ignition apparatus and lighting generator, for instance?

"NORMA" Bearings are the standard bearings in the high-grade magnetos and lighting generators used on cars of the better class, and adopted because of their proved dependability. It is, then, a mere statement of fact to say that "NORMA" Bearings identify dependable magnetos and lighting generators.

Be Sure — See That Your  
Electrical Accessories  
Are "NORMA" Equipped

## THE NORMA COMPANY OF AMERICA

1790 BROADWAY

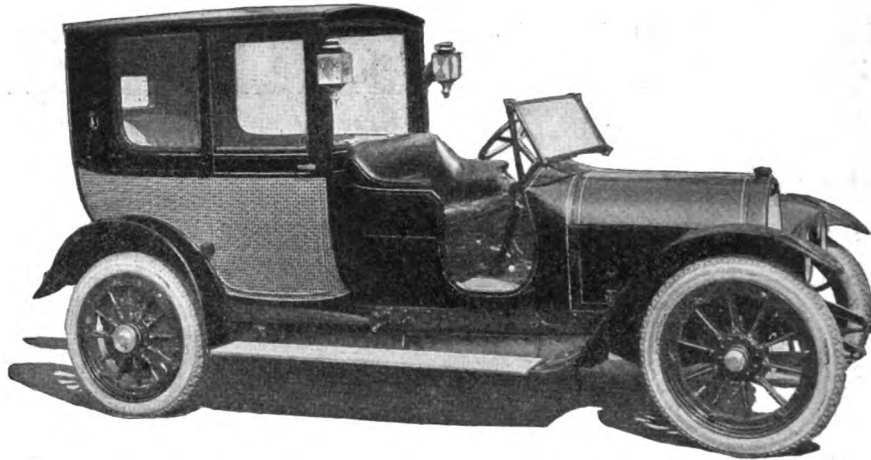
NEW YORK

Ball, Roller, Thrust, Combination Bearings



# The BREWSTER BODY

*Acme of Refinement and Luxury*



BROUGHAM—BREWSTER CHASSIS

## Painted and Varnished With Valentine's Materials

In the old carriage days, when the name Brewster was supreme, the house of Brewster used nothing in its painting department except Valentine's.

Luxury- and refinement-loving America still turns to Brewster when it wishes the superlative in body-making, and the Brewsters, in securing the superb finish of their work, still use nothing but Valentine's undercoats, colors and varnishes.

One hundred and seven years of body-building have taught them that this is the best and surest way to secure perfection. The Brewsters attribute their success in part to their use of Valentine's materials.

There is a lesson here to the paint-shop that wants to attain sure results in the way of good work and consequent *profit*.

Send for our book, "**Automobile Painting Systems.**"

### VALENTINE & COMPANY

Established 1832

*Manufacturers of High-Grade Varnishes and Colors*

**456 Fourth Avenue**

**New York**

**343 So. Dearborn Street, CHICAGO**

**74 Pearl Street, BOSTON**

TRADE **VALENTINE'S** MARK

# AMERICAN GARAGE AND AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE,  
GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. VII. No. 11

New York — CHICAGO — Detroit

April, 1917

## Motor Trade Patriotism

OUR country's declaration of war against Germany was followed by offers from motor car manufacturers to turn over to the government their ordercrowded mammoth plants, to be used in the production of ammunition for the American army and navy. Then the National Automobile Chamber of Commerce adopted resolutions in patriotic support of the President and Congress in a war to uphold the honor and dignity of our flag and the protection of American lives and property.

The retail branch of the trade has not been unmindful of the crisis that has been reached in the affairs of our country, and the ability and desire to serve the national needs patriotically and with every ounce of its power that may be required of it by the nation's trusted leaders. Accordingly, appropriate resolutions by the A. A. G. O. have been adopted and forwarded to Washington. They are featured on another page in this issue.

The motor associations and clubs have also rallied to the support of the government in its fight for the principle of democracy against autocracy and a lasting world peace. This means much, in connection with the garage and retail motor trade's active co-operation, in the direction of mobilizing the man power of the nation when the railway facilities shall have become overtaxed.

It should be a matter of pardonable pride on the part of the great automobile industry of America to learn that battle-tossed and maimed Europe turned to the United States and its automobile factories for a system of intensified production capable of meeting its phenomenal munition requirements, and it goes without saying that the model thus adopted abroad will, under the direction of our government and its civilian aids, be extended to every part of our mobilized industrial equipment as rapidly as the war conditions may warrant.

While preparedness has been a flower of slow growth in this country in a military sense, industrially and in other ways we have builded better

than we knew. With becoming modesty the motor trade may accept as a silent tribute to its efficiency the appropriation of its methods abroad and at home, and with the fervor of a young and growing industry conscious of its strength throw its whole soul into the scale of modern warfare on the side of humanity, justice and its country's honor.

## Be a Bear

WHEN you buy used cars, be a bear. After buying the car, converting it from junk—for that is what any much-used car is—into merchandise, then you can afford to be a bull, but only a heifer bull at that, for the price must be right in order to produce a sale and connect up with a profit.

Second-hand business is second-hand business, whether it be in furniture, jewelry, old clothes or automobiles. If you ever tried to sell anything second-hand to a seasoned, successful dealer in that line, you felt insulted at the price he offered. Yet he buys stuff in sufficient quantity to make volume. Then if you tried to buy any of his goods the price was so high that you were insulted again. The same principle applies to second-hand or, employing the more polite term, used cars.

The used car business, generally speaking, has been a profitless one. Dealers have bid against each other for cars because there was a new-car sale to follow. It was not, "What can I afford to pay for a used car on the basis of turning it at a profit?" but "What can I get out of it, in turning it, to apply on the purchase of a new car?" With the eyes glued on a prospective new-car sale the judgment exercised in buying the old car has proven faulty, hence a loss on the old car and a paring down or elimination of the profit on the new car.

"Safety first," coupled with real merchandising ideas, demand that the two transactions be considered separately. Buy the old car, but buy it right. Be a bear. Then sell a new car, and sell it at a profit. There you are—two profits instead of one, or, as in many instances, none.

## The Solidarity of Interests

**T**HE defeat of the garage lien bill in Ohio by car owner influences suggests an editorial under the above caption. It appears that certain motor clubs in the Buckeye state felt that protection to the just rights of the garagemen who are their servants would be an injury to them, all unmindful of the well-established law that the ultimate consumer must pay all bills.

In a number of other states even more drastic legislation than that proposed in Ohio received the unqualified endorsement of the motor clubs, on the reasonable theory that, should the garage industry be protected against losses occasioned by the dishonest and tricky car owners, the tendency would be to work out a lower cost for service and supplies to the honest motoring public.

One argument that should be driven home on all occasions is that the different branches of our industry are interdependent and that an injury or injustice to one inevitably and irresistibly becomes harmful to the others in a greater or lesser degree.

We do not plead for any form of standpatism. We do not hold that when any given branch of a trade refuses to keep step to the martial music of commercial progress that it should not be chastised and whipped into true form; but we do unsparingly condemn that quality of short-sightedness that regards one branch of an industry as necessarily arrayed against another and that the true interests of any one of the branches are intrinsically opposed to those of the ultimate consumer.

In Illinois the most influential motor clubs of the state unqualifiedly endorsed garage lien legislation, and Governor Lowden is on record as favoring the most far-reaching protection to the garageman as the greatest safeguard to the motorist who desires the best and most economical garage service.

Shame to Ohio motordom! Is it not the blind leading the blind? May their eyes be opened before another session of the legislature convenes at Columbus.

## Openings for Garages in the South

**T**HE increase in the number of cars on the highways and boulevards has been large in recent years and the increase in the number of garages has not kept pace. This is particularly and peculiarly true in the South, where the sale of cars has recently taken on pronounced activity as the result of cotton and diversified crop prosperity.

In the North and West the progress and development of the automobile industry has been steady, marching right along with the development of the good roads movement and the year-upon-year, layered prosperity. In the South

all of these determining factors have been more or less halted, but the wave of agricultural prosperity that has recently swept over it has placed Dixieland on a par with other sections of the country in point of car sales activity and general prosperity and has swamped the existing garages with business.

The list of garages in the southern states issued by one of the most reliable listing firms in the country late in 1916 will be of interest in this connection. It follows:

Alabama .....	124	Maryland .....	207
Arkansas .....	93	North Carolina .....	259
Florida .....	271	South Carolina .....	163
Georgia .....	359	Tennessee .....	133
Louisiana .....	106	Texas .....	951
Mississippi .....	110	Virginia .....	193

These figures do not include exclusive car dealers, repair shops, accessory stores and supply depots. Field representatives of the A. A. G. O. report the conditions mentioned, with the suggestion that live garagemen seeking new locations could not do better than to look for them in the South, where competition is less keen and where greater returns than elsewhere on the investment can be reasonably looked for.

## Wanted: More Real Publicity

**F**ELIX SHAY has said: "The average American newspaper is made up of one page of Rush, one of Gush, one of Mush, one of Slush, three of Blush, and the balance of—Hush!

This suggests that automobile publicity as it is today public-ed consists of 40 per cent of Brag, 20 per cent of Rag, 10 per cent of Wag, 10 of Gag, and a final 10 of "Tag, you're It"—the *It* being real news and information.

What is wanted is more and better publicity, more actual news and information about products; better, more concise statements of points and facts. The rest is rubbish, and the public spot it as such if it gets by the editors.

The publicity man in each establishment should have a "nose for news," know how to view facts from the readers' standpoint and possess the art of keeping silent when there is nothing to say.

In which event, "Silence is golden" because it will save gold dollars for his boss, golden time for "his public-ness" and reclaim the gold values that so lavishly pour into the waste paper basket.

This doesn't mean that some of the work done is not par excellent. It is. One of the best "stories" we ever published was sent in by a publicity man who knows his business.

Standardization of prices for the local trade is now receiving attention, supplementing the standard price work that has been done in behalf of the tourist trade. Garagemen once determining what fair prices are, are not timid about standing valiantly for them.

# Specializes in Taxi Business

**Oak Park, Ill., Garageman Makes Great Record—  
Accumulates Values but Doesn't Worry Over Costs  
and Systems—Startling Innovations Introduced**

**W**ILLIAM FITZGERALD, garageman at Oak Park, Ill., once stored cars, sold cars, repaired cars, supplied cars with fuel and lubricants, accessories, etc., in addition to renting out cars and doing a general auto livery business—now he does an exclusive livery or taxi business, the present style of the concern being the Oak Park Taxi Co.

Mr. Fitzgerald started business six years ago in company with H. H. Davidson and another party. He had \$500 in the business. But he went at it with enthusiasm, backed by enterprise and service good will, and in a short time he and Davidson bought out the third man, and later in the specialization that developed Mr. Davidson took the sales, repair and storage departments of the business and Mr. Fitzgerald the livery department, adopting the new name already mentioned.

That the livery or taxi business has paid Mr. Fitzgerald is indicated by the fact that he now has a business and equipment valued at \$40,000. He has not over-worked or spoiled his disposition in achieving this result, but has made success with none of the blighting results that too often go with it.

## **Crazy to Start in a Temperance Town.**

"They all said I was crazy to attempt to build up a prosperous taxi business in a town like Oak Park," said Fitzgerald. "It has been dry for years and has a population of only 27,000 people, while good taxicab businesses are said to grow luxuriantly only on the patronage of the sporting element which our little city almost wholly lacks. What I have done is to educate people to ride in Ford cars and at prices that proved to be very attractive."

Questioned about cost-finding and profit,

Bro. "Fitz" said: "There you go. Cost-finding and system as it is preached in these days is a distraction to me. I don't want to be harassed by such details. In the time it would take to figure up how much I have made on one trip I could book orders for twenty trips and gain one or more new customers. By incorporating distasteful methods of undoubted merits into my business I very likely could increase my profits, but I live in my business and the pleasure I get out of it running it my way more than compensates for the few extra dollars that may get away. I will live longer, too—and, you know, there is a saying that you are a long while dead."

## **Equipment and Methods.**

Mr. Fitzgerald operates nine limousines, two touring cars, two 14-passenger buses, two United States mail cars—all Fords—and four big Studebaker limousines and two 8-cylinder Cadillac touring cars. On the Ford limousines he uses a special body with the same specifications as those of the "Yellow" and other popular taxis used in Chicago, with the exception that it is two inches wider and three inches longer, inside measure.

The Oak Park Taxi Co. has 3,000 livery customers, and strange as it may seem, 30 per cent of the business done is commercial—for business firms in delivering parcels or small loads.

Mr. Fitzgerald was asked as to what particular features or policies of his business he attributed his exceptional success and his answer was:

## **Low Trip Rate and Cars Without Drivers Big Hit.**

"First, I would say the low price of 50 cents for a trip to any part of Oak Park for one to four passengers. On the longer

hauls I make a price that would be considered high by a Chicago or Omaha taxi man. I always make my price in advance, however, so that the customer knows exactly what the trip is to cost before the start is made.

"There is not a meter in my equipment. Folks just naturally hate them and I don't irritate my customers by having them around. Out-and-out, before-you-start prices are immensely popular in Oak Park and the 50-cents-anywhere-in-town figure has been hailed with joy and has proven to be a constant delight.

"Second, I introduced last year the policy of renting out cars without drivers at \$1 an hour. This has been equally as popular as the 50-cent rate for trips with a driver. My reason for inaugurating this plan is that the auto livery or taxi business is destined to supplant the old horse livery business, and, where a person is accustomed to renting a horse and carriage and doing his own driving, it makes it all the easier for him to change to the taxi. I have from two to three cars going all the time under this plan and will double the number in a year."

## **No Increase in Accident Hazard.**

On being asked if the accident hazard was not greatly increased when customers drove the cars instead of his own trusted drivers, he replied: "No; only one accident has occurred so far, breaking a wind shield and a wheel. I must know the party who rents the car in order to guard against theft, but I can safely put it up to the customer's own judgment as to whether or not he is capable of driving a car. I have found that a customer, generally speaking, is more careful than our

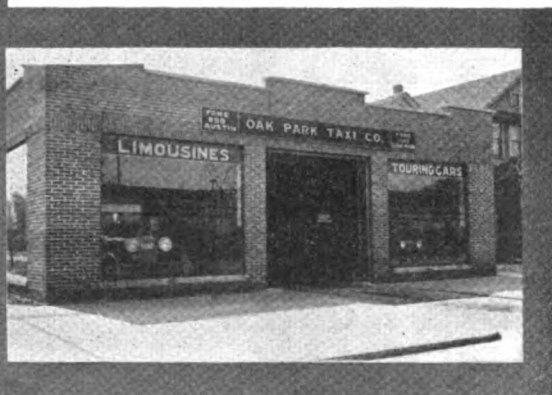
(Continued on page 36.)



Old Building, Also Davidson's Garage.



Mr. Fitzgerald.

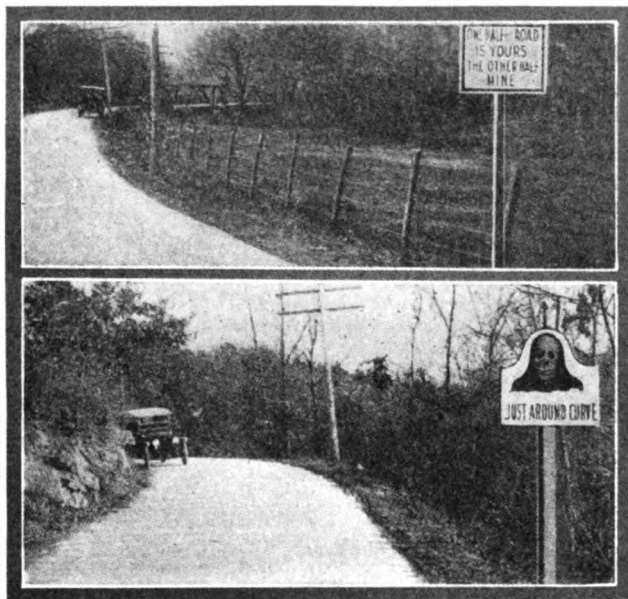


The New Building on Corner.



## Advertising and Other Sign Boards

These two signboards on the Southern National Highway, near Asheville, N. C., tell the whole story at a glance. A driver must be a reckless one who would dash around the curve at high speed after the death's head warning. He also must be a selfish one to crowd in on the wrong side after reading the half-and-half sign.



One objection is that the signs are somewhat expensive, owing to the change in mileage. That is real information to the motorist, but can be left off if a hundred or more signs are used. The garageman should make an arrangement with the house owner or house owners nearest the sign by which the garageman shall pay a small sum for the use of the telephone, refusing to accept anything from the car owner.

As a separate plan or one to be worked in connection with danger signs, no sign is better than one which gives information the car owner wants. Generally he wants to know just where he is or which cross-road to take. He is interested in his distance from the nearest large town as well as the nearest small town. How about signs like this, of course with necessary changes in mileage:

**Quality Garage**

**MISSIONVILLE**

**4 Miles East**

**DES MOINES**

**37 Miles East**

**Take Road to Left**

Local newspapers, personal calls and personal letters must be used for local business. More and more, however, tourist trade is becoming valuable and one of the readiest means of attracting it is by means of signs; not the stereotyped ones, but the kind that has as convincing a punch as personal solicitation.

And this brings to mind the signboard end of a garageman's advertising. On national highways there should be no interference with the standard highway signs, but the inventive garageman can readily combine information and advertising in a way to attract the motorist's attention.

How would this be for a sign on a bad curve or hill:

**DANGER**

**If you didn't see this sign,  
you need help.**

**Call Tel. 83 from nearest  
house and we'll fix  
you up.**

**QUALITY GARAGE  
MISSIONVILLE  
9 Miles East**

Subscribers are asked to send in the wording and display of signs which have helped their business.

### Danger in Private Garages.

Exchanges record the asphyxiation of over a hundred car owners in private garages during the past month. During the same time there is not recorded a solitary

case of the kind in a public garage. The damage is caused by running the engine in the confined space of the private garage. In the larger space of the public garage the poisonous gas has a chance to dissipate before damage is done.

The government bureau of mines has again issued a warning to owners of private garages. It says: "In tests conducted, the air in the garage was rendered decidedly dangerous after the automobile engine had been running fifteen minutes. The gas is carbon monoxide, colorless, odorless and tasteless, and is extremely poisonous. The dangerous symptoms of carbon monoxide poisoning come almost without warning and collapse in a garage generally proves fatal unless outside air arrives very soon."

As a matter of common humanity in the first place and of business in the second place, AMERICAN GARAGE AND AUTO DEALER recommends that its subscribers take up this question at every opportunity with the private garage owners. Many lives could thus be saved and, incidentally, many a car owner now using a private garage could be induced to patronize a public garage.

### Some Notable Net Earnings for 1916.

B. F. Goodrich Co., Akron, Ohio, \$10,614,910.

Pierce-Arrow Motor Car Corporation, Buffalo, N. Y., \$4,076,000.

Stutz Motor Car Co., Indianapolis, \$649,042.

Ajax Rubber Co., Inc., New York, \$1,268,311.

Goodyear Tire & Rubber Co., Akron, Ohio, \$7,033,330.

Stromberg Motor Devices Co., Chicago, \$278,000.

U. S. Rubber Co., New York, \$11,226,000.

Studebaker Corp., South Bend, Ind., \$8,611,245.

Fisk Rubber Co., Chicopee Falls, Mass., \$1,836,830.

Chevrolet Motor Co., \$7,095,071.

Stromberg Carbureter Co., Chicago, \$278,219.

Peerless Truck & Motor Corp., Cleveland, \$2,100,000.

Kelsey Wheel Co., Detroit, \$858,639.

Prudden Wheel Co., Lansing, Mich., \$583,626.

Motor Products Co., Detroit, (8 mos.), \$598,091.

Automobile Crankshaft Corp., Detroit, \$137,488.

### Redden Consolidated Office.

The new Chicago office of the Redden Motor Truck Co., Inc., is a consolidation of the New York, Detroit and Chicago offices. Temporary Chicago headquarters have been established at 1442 South Michigan avenue, Chicago.

# Retail Automobile Advertising

The managing editor of the *AMERICAN GARAGE AND AUTO DEALER* took the time recently to run through the advertising columns of about three hundred country weeklies and small city dailies for the purpose of getting a line on retail automobile advertising.

pointed is due to a lack of real and sympathetic co-operation on the part of the dealer with the advertising men at the distributing house and the factory. This should not be.

The accompanying illustration shows samples of the dealer's advertising we

What did he find? A singular lack of originality in the advertising examined. It was good advertising in one way and bad advertising in another way—good because the layout in point of illustrations and text was excellent, but bad on account of the personal and local appeal being totally lacking.

On investigation we found that both factory and distributor are offering the best sort of co-operation to the dealer in the production of effective, sales-creating advertising copy and that the defect here

found—factory and distributor-made and not a suggestion of the dealer having had anything to do with it, in spite of the fact that the dealer's active participating in the work has been in most instances solicited.

The way to improve this advertising and strengthen its appeal is to supply your distributor or factory with facts bearing upon the purely local aspects of your selling work, the personal and local arguments you are using successfully in putting over sales and material out of which face-to-face, heart-to-heart appeals to the local

buying public are being successfully made. You, Mr. Dealer, are paying for the space and more of you should go into the ad. The advertising men employed by your distributor and factory principals represent highly-paid, specialized brains and their services are yours for the asking; indeed, these services in many instances are being proffered time and again.

Why not get next? And right away, now that spring business is opening up and the big buying movement is about to start. Remember this—let the factory or distributor tell the story of the car in his way, but see that you follow up right in the same ad with the things that you know about local conditions that will act as *clinchers*. If you are to get the best results out of the advertising you pay for, get in on this sensible, results-multiplying plan extending your personal reach and multiplying yourself as a selling force.

## Garage Lien Law Sought in New York.

The New York Garage Association is making a fight for a garage lien law this session of the legislature. It is known as the McWhinney bill and contains many good points and is regarded by the New York state leaders as a model measure. There is strong opposition to it but the garage interests are putting up a stiff fight with large hopes of winning. The text of the bill follows:

### AN ACT

To amend the lien law, in relation to lien of bailee of motor vehicles.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section one hundred and eighty-four of chapter thirty-eight of the laws of nineteen hundred and nine, entitled "An act in relation to liens, constituting chapter thirty-three of the consolidated laws," is hereby amended to read as follows: Par. 184. Lien of bailee of motor vehicles. A person keeping a garage or place for the storage, maintenance, keeping or repair of motor vehicles, as defined by article eleven of the highway law, and who in connection therewith stores, maintains, keeps or repairs any motor vehicle or furnishes gasoline or other supplies therefor at the request or with the consent of the owner, whether such owner be a conditional vendee or a mortgagor remaining in possession or otherwise, has a lien upon such motor vehicle for the sum due for such storing, maintaining, keeping or repairing of such motor vehicle, or for furnishing gasoline or other supplies therefor, and may detain such motor vehicle at any time it may be lawfully in his possession until such sum is paid. The lien of such bailee on such motor vehicle shall extend to his right of possession thereof at all times until such sum is paid; and such bailee may by an action in replevin retake possession of the same from any person or place, wherever found, and hold the same pursuant to the provision of this chapter, for such storage, maintenance, keeping and repair.

A law making the jumping of a garage bill a criminal offence a la hotel bill would be an excellent thing. The hotel keeper has it; why not the garage keeper?

### Bill Hits Pirate Parts Men.

In the interest of automobile manufacturers, motor car accessory dealers, the garage man, and automobile owners, Congressman M. A. Morrison of Indiana has introduced in Congress a drastic measure, aimed at the "imitation" evil of the motor car and accessory business. This evil is the manufacture and distribution of imitation parts known as "pirate parts," for repair and replacement on standard accessories with which automobiles are equipped. An advocate of the measure says:

#### Substitution Grows with the Industry.

"In spite of the activity of trade bodies and commercial organizations against the evils of substitution, the quick growth of the automobile industry has resulted in many unscrupulous concerns attempting to unload on the public pirate parts for the replacing of certain wearing parts on standard accessories. Those accessories include magnetos, starting and lighting systems, speedometers, and other equipment. The practices of these so-called pirate parts makers obviously affect not only accessories but automobiles as well.

"Because it costs the reputable manufacturer more money to produce parts for replacement than it does the pirate parts maker, inasmuch as he has a reputation to sustain the world over, the need of legislation to overcome the evil has been evident for a long time. It is unfortunate that after a reputable manufacturer has invested millions in factories, equipment, advertising and good-will in the production of high-grade automobile or accessories, some so-called pirate maker comes along with little or no investment, does not advertise, neither does he brand his product, but whose only aim is to imitate the product of the successful manufacturer and fraudulently, if necessary, make an exorbitant and unreasonable profit for himself.

"The bill introduced in Congress by Representative Morrison covers thoroughly every phase of substitution and imitation. It proposes to establish in conjunction with the United States Patent Office a bureau for the registration of designs. At this bureau a manufacturer may register the design of the complete article he makes, including the design of the various parts of which it is composed. A certificate of registration of design will be issued to the original manufacturer, which will protect him in the design of every part of his product.

#### Hits Pirate Manufacturers.

"The bill provides that it shall be unlawful for any one to design, manufacture, and offer for sale any article or part for replacement on such article which is similar in design to the product previously registered by the original manufacturer. There is a further provision that the manufacturer, dealer or distributor who unlawfully manufactures or offers for sale imitation products and parts shall be fined and permanently restrained from continuing in practice."

# The Garage and Advertising

## Classy Ads with Illustrations, Local Color and Personal Punch Big Winners

The garageman should advertise. Those who do and do it right get cash in returns. Advertising multiplies a business man's personal reach if he puts personal punch into his copy. You can write copy better than a professional copy writer does, for the professional too often talks in the stilted, affected language of the advertising agency and not in the plain, natural tongue of the ordinary citizen of your town.

The selling talk you would hand to a man if you met him on the street is the best kind of copy for your ad. It is even better than what you would say in a personal talk because it is boiled down, concentrated and focused in a way to carry conviction, where in a face-to-face talk you are more likely to scatter. Nothing but the introduction of a "highfalutin" lingo can spoil what is otherwise good copy.

Few ads of class are without illustrations. Just imagine the best advertising you ever saw without the fruit of the artist's pencil or the camera's shading and toning. Pictures visualize the thing advertised and impress it upon the mind stronger than can words alone, besides making it easier to attain what is regarded as class than in any other way. Note the page of garage ads opposite. In your local newspapers or on a hand-bill they would attract instant and favorable attention.

#### Classy Ads at Small Cost.

Of course, you are thinking that this class of copy is not within your reach. Art work of this character is costly. So it is, but these ads are syndicated and are known as the Western Newspaper Union Ad Service, obtainable of your local newspaper publisher at a small price. If interested, as we know you are, consult him without delay and start an advertising campaign for spring and summer business that will at once place you in the ranks among the most effective advertisers in your town.

We have one criticism of these ads to offer. They lack local color and personal punch. This can be easily remedied. They are issued and supplied in sets of nine. Retain the illustrations, side border and possibly one or more of the paragraphs in the text, then rewrite and set in the remaining paragraphs in addition to placing your name and location at the bottom and you will have a combination of syndicate and personally written advertising. In this way you can connect up with local news events, make the ad more thoroughly fit your individual business needs, and put your own personality into it. This gives you all of the essentials of the most expensive advertising copy—classy appearance, personal punch, local color, and nicely adjusted details expressive of the individual character of your particular business.

Mr. Garageman, two or three hours of thoughtful application each week to your advertising appeal can be made the most profitable hours you put in in connection with your business building activities. Just think of the army of customers and prospective customers you can talk to in this way! Try it and report results. The Western Newspaper Union service, we are advised, has already made a brilliant record for itself and those who use it. Its usefulness can be further extended by your taking it up.

#### Used Car Clearing House.

The Waterloo, Ia., Auto Dealers' Association has established a clearing house where values on used cars are to be determined. Then no dealer will pay more than the value set by the clearing house in taking in the car as part payment on a new car.

The Dubuque, Ia., association has a plan whereby a mart for used cars is to be established. Individual dealers will not buy cars but will be joint owners of the mart where the cars will be purchased.

#### Jordan Can Fix It.

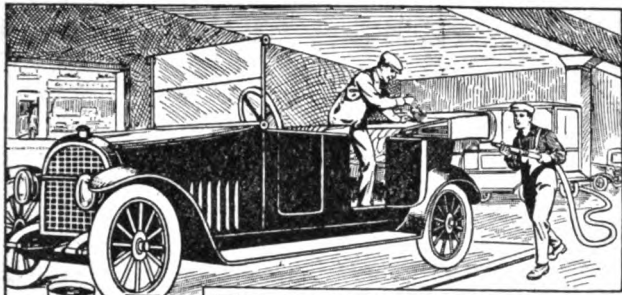
R. Blaine Jordan & Co., Sonora, Texas, is a garage and repair shop, which has worked up more than a state reputation by making good its slogan: "Jordan Can Fix It."

Jordan, himself, is a thorough mechanic and personally sees to it that Jordan not only can, but does, fix it and fix it well. From a beginning based only on his mechanical knowledge, Jordan has worked into the ownership of a \$20,000 plant. Needless to say, Jordan is a subscriber to AMERICAN GARAGE AND AUTO DEALER and a member of A. A. G. O.

#### Sea Water, Chemicals and Fire Fail to Harm Overlands.

Eighteen six-cylinder Overlands were in the hold of the steamer Wissely when it was run ashore last year, a burning wreck, on the coast of China. For three months the vessel was completely under water, but was raised and the sorry-looking Overlands were put ashore. In addition to three days of fire and three months of sea water the vessel had a load of chemicals which had played merry hob with the upholstery.

It was found the engines and chasses were unharmed and \$200 each was spent in new paint and upholstery. All the cars have been run in livery service for about six months and the owner declares they are and have been in as good shape as if direct from the factory.



## WE KEEP IT CLEAN

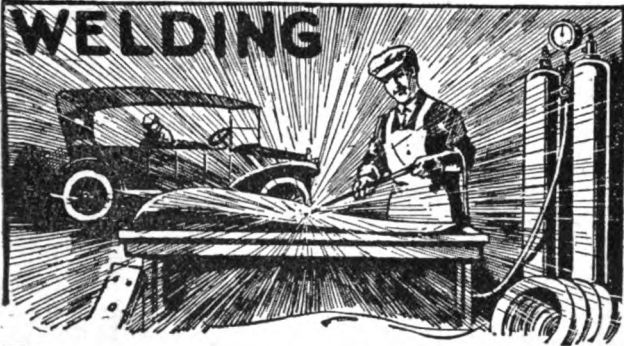
**W**HY be a slave to your car? Why bother with the dirt and drudgery of keeping it clean when you haven't the conveniences for doing it?

We can keep your car as clean as you want it at a price you can easily afford.

### Sensible Service That Pleases

You can escape all the dirty, tedious jobs of keeping your car clean and in good running order by arranging with us to look after it.

We will be glad to give you a figure either by the month or the job if you will see us right away.



## Bring Us the Hard Jobs

We have saved many automobile owners the trouble and expense of returning broken parts to the factory for repairs.

The fact that we are equipped to do welding on broken castings or can make new parts if necessary is a big asset to this community.

No matter what your trouble is, bring it in to us. Don't think that any job is too big for us. We have facilities that will surprise you. And our prices are exceptionally reasonable.

Give us a chance to figure on your smaller jobs, too—grinding valves, burning out carbon, etc. You will find us always able to please you.



## AUTO SUPPLIES

**W**E AIM to carry in stock all the auto supplies you are likely to need. And we know our prices are lower than you would oftentimes pay if you sent away. Besides, we save you the high express charges you have to pay on small orders.

### For All Makes of Cars

We carry a large line of high quality tires in all the popular sizes. And you can always be sure of getting good, live, fresh goods when buying here.

Spark plugs, dry cells, horns, lamps and all standard supplies at prices that please.



## RELIABLE REPAIRING

**E**XPERT workmanship and a square deal—that's what you get when you let us do your repairing.

We know how to get at all kinds of motor troubles and we know what to do when we find them.

### Prices Always Reasonable

Good workmen waste least time. And time is what you pay for in automobile repairing.

But when you get your repairing done here, you know there's no time wasted—no inexperienced experimenting at your expense.

Try us once and you'll be convinced.





1



2



3



4



5



6



7



8

DRIVE-AWAYS FROM FACTORY TO RETAIL DISTRIBUTING POINTS NULLIFY FREIGHT TRAFFIC CONGESTION.  
 1—A "kid" drive-away with Indian background. 2—A Hudson drive-away from factory to distributing point. 3—Oakland drive-away.  
 4—Studebaker. 5—Haynes. 6—Grant Six. 7—Lexington. 8—Chalmers.

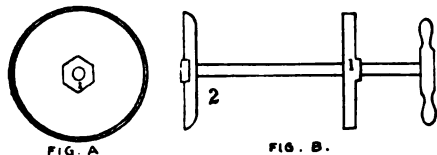
# Soldering Kinks for Repairmen

By the Use of a Material Known as  
Nokorode Effective Soldering Is Done—  
Some Hints of Value to Auto Repairers

**T**HE following soldering kinks will enable automobile repairers to do better and less time-consuming soldering, they being taken from the experiences of members of our craft and others who find the use of the comparatively new product mentioned above a big step in the direction of solving all of their soldering troubles:

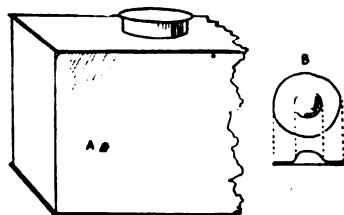
## To Solder New Thread on Grease Gun.

Glenn Metcalf, Blandinsville, Ill., gives one of his numerous happy experiences with Nokorode, thus:



"When the threads on the cap of a Grease Gun become so worn that it jumps threads, remove plunger and unscrew cap. On the inside of cap solder a nut the same size and thread as the screw. This will make the gun good as new. Be sure to solder the nut to the inside of the cap as it will stand more direct strain than on the outside, employing Nokorode as a soldering flux."

## To Repair Leak in Gasoline Tank Without Removing from Car.



Ivan R. Lucas, Bradford, Pa., writes:

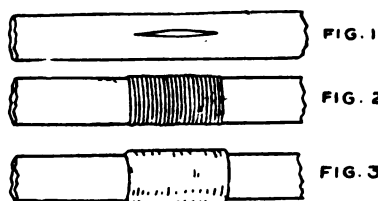
"I had a leak around rivet in the gasoline tank of a car and could not repair same without removing the tank from the car which would require the removal of the body, so I tried soldering from the outside, but with no results. I then made a patch from a small piece of sheet copper and peining it so that it was dished quite a little, thoroughly tinned the inside of patch, first applying Nokorode, then after applying Nokorode to the tank around the leak, I next heated my copper very hot and placed the patch on it and put it in position, holding it there and pressing it hard enough to work out all surplus solder and after smoothing up the edges my job was as tight as could be wanted by anyone."

"Would advise those who may try this to have their tank absolutely dry and free from gas as the result of having it otherwise would no doubt be disastrous."

**Editor's Note**—Nokorode is a non-corrosive soldering paste manufactured by the W. M. Dunton Co., Providence, R. I., and distributed by automobile accessory, electrical supply, hardware and other jobbers or supplied direct. It has been in use for some years and has given excellent satisfaction. It has also been tried out in the AMERICAN GARAGE AND AUTO DEALER-A. A. G. O. demonstration garage by our Mr. Hinrichsen and is unreservedly recommended by him.

"A crack in a cast-iron pipe or a gas-line-engine cylinder, caused by freezing, can be repaired in the following manner, if the pressure the part has to withstand is not too great," writes Wm. W. Grant. "Procure some sulphate of copper, commonly known as bluestone, and dissolve it in water. Clean the edges of the crack well with a file or sandpaper. Paint the iron with the solution several times until there is a coat of copper on it. The copper surface can be easily soft soldered which will produce a satisfactory repair in many cases."

## Repairing a Crack in the Pipe of a Stanley Automobile.



"I had a very bad crack in the steam pipe in an automobile which I was repairing," writes John M. Craig.

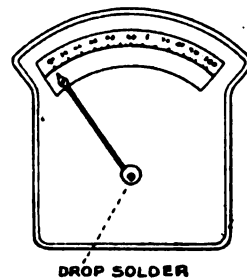
"The crack was  $2\frac{1}{4}$  inches long, and was spread apart in the center about  $\frac{1}{8}$  of an inch. I did not want to take the pipe out as that would necessitate taking the engine apart, and I would also have to wait a month before I would get it back from the factory."

"First I tried soldering with resin, and filled up the crack with solder, then I started up the boiler and got up about 100 pounds of steam in the pipe, but it started to leak, as the pressure was too much for the solder. I then decided to try another idea, as I had only 100 pounds pressure in the boiler and had to get 250 pounds."

"This time I cleaned up the pipe very clean and got some of the Nokorode and spread around the pipe where the crack was, then took a piece of wire about  $\frac{1}{32}$  of an inch in diameter and wound it tightly around the pipe where the crack was, after which I put another coat of Nokorode on the wire, then added another coat of solder, started up the boiler with 150 pounds of

steam pressure, and finding it did not leak, I kept adding more pressure of steam, until I had reached the maximum rate, which is 250 pounds, and the automobile has been constantly in use for the last six months."

## Balancing a Voltmeter Pointer.



"I have found an ideal way of making a Volt or Ammeter read correctly, when testing and other ways fail," says Frank Scott.

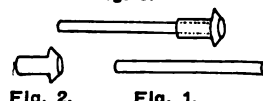
"First—Clean the bottom of the pointer, and then apply a

small quantity of Nokorode and after a drop of solder.

"You will find that the pointer will come to its proper place after this treatment."

## To Repair Gasoline Feed Pipes.

Fig. 3.



"The following will be found very useful in soldering connections on the gasoline line as gas engines and automobiles," says Glenn Metcalf.

"First thoroughly clean end of pipe (Fig. 1) and tin end back for about an inch. Then clean small end of sleeve (Fig. 2) and tin end, inside if possible. Next hold sleeve with pliers and pipe in hand and hold before flame of torch, and as the solder melts slip sleeve over pipe. Then run a drop of solder around pipe at end of sleeve and you have a first class gas tight joint shown at Fig. 3. For a neat job finish with a strip of emery cloth. Use Nokorode and it will not corrode."

## Stopping a Leak in an Automobile Radiator.

H. H. Bailey, Enterprise, Ala., has this to say:

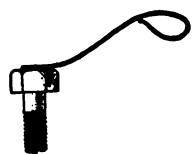
"In soldering the connection of the water supply to an automobile radiator, the connections had been soldered several times; from the jolt of the machine it would break loose; the radiator being springy would leak with packing between the radiator and water supply."

"I bolted the connection to the radiator, using a piece of packing, then after repeated efforts to solder over the packing with the products I had on hand and failing, I used Nokorode and it held all right; by catching the flange of the water supply across the edge of the packing to the radiator with solder holds it steady and keeps

it from shaking and causing the packing to let it leak.

"The soldering would not hold until I used Nokorode paste."

#### Starting a Bolt in a Difficult Place.



A recent writer in Popular Mechanics says:

"Recently, while working on an automobile, I found it difficult to get a bolt started in its place, and when I had about decided to remove the other parts to enter the bolt, I hit upon the following scheme of overcoming the difficulty. A piece of wire was procured and one end lightly soldered to the bolt head.

"This served as a handle for placing the bolt, and was easily removed by giving the wire a few turns. The same means can be used to enter bolts and pins in places not easily accessible, the time of preparation being small as compared with the practical value of the device."

#### Soldering Wires



This is what H. G. Newell says:

"The trough where soldered, only, is brightened with fine sand paper. Wire solder, Nokorode Paste and any hot iron, tinned or untinned or blow torch does the rest. Used several years. Nothing like it. Always in long wrap as shown. Easily disconnected."

#### Farmers Are Liberal Buyers.

Haynes' dealers report an unprecedented proportion of their sales is to farmers. One of the facts shown by these sales is that nearly half of the sixes sold to farmers were to buyers who had never before owned a car. This is added proof that the farmers have money to spend and that, in larger proportion than city buyers, they invest in medium or high-priced cars.

#### To License Car Drivers.

Massachusetts and Tennessee legislatures are favorably considering bills to compel every automobile driver to pass an examination. In Tennessee it is proposed to license the driver and provide each with a numbered button, which he or she must show on demand of any traffic official.

#### Bradford-Ackerman Corporation.

Bradford-Ackerman Corporation is a new firm with headquarters in the Forty-second Street Building, New York City. The firm will represent manufacturers of automobile accessories in domestic and foreign trade, correspondence being solicited to that end. Members of the firm are A. H. Ackerman, formerly vice president and general manager of the U. S. Light & Heat Corp., and C. C. Bradford, formerly sales manager of the same company.

## Service Bureau for Dealers

**T**O SAVE dealers the expense of more or less frequent trips to Detroit factories and to render valuable service in other ways is the object of the recently organized Wallace C. Hood Service Bureau, Dime Bank Bldg., Detroit.

If quick delivery on some cars is desired or some parts are needed in a hurry the dealer may save himself a trip to the automobile metropolis by telegraphing the service bureau, and it will get in touch with the factory so that the cars are delivered on time.

If the dealer needs a sales manager or any other employe the bureau stands ready to find him one; and just the man he wants.

If a dealer has trouble in disposing of his cars the sales promotion department will help him.

A suitable accounting system will be installed, if he desires, and his books will be balanced once a month and audited twice a year.

#### Many Ways of Helping.

The multitudinous ways in which the bureau can help the dealer are not realized until the proposition is studied.

For example: A dealer in Los Angeles is behind in his deliveries. He has telegraphed and written the factory several times for a shipment of cars long overdue. Finally he is forced to come to Detroit to get action.

Instead he may telegraph the bureau and a representative immediately gets in touch with the factory, finds out the cause of the delay, and camps on the factory's trail until the cars are finally shipped.

However, if the dealer is a subscriber there is no need for him getting into this difficulty, for he could have sent a copy of the order of the shipment to the bureau at the same time he sent one to the factory, and thus the bureau would have been watching to see that the cars were shipped when specified.

A dealer in a large city heard a rumor that the biggest dealer in his city was planning to give up one of his lines, and it was a most lucrative one. He was anxious to get it, and ordinarily would have jumped the first train to Detroit to clinch the matter at the factory. He saved himself time and money, however, by telegraphing the bureau. An interview with the manager confirmed the report that a change was to be made, and, furthermore, that this dealer would satisfy them. All the preliminary work was attended to by the bureau and the client merely came to close the final details.

Not only was this method more satisfactory to the dealer, but since he was not sure of the news he had heard it was much safer to first confirm it through the bureau. Thus, if the news had proved false he would have lost nothing.

In many cases obtaining territory can be more advantageously done through the bureau than by the dealer himself, for the bureau is in a better position to sell the dealer to the factory and show the advantages of having this dealer handle the line.



Wallace C. Hood.

Being in close touch with the factories, it is many times possible for the bureau to notify a dealer in a given territory that the agency for some particularly desirable car is open long before the news is known generally.

The president and founder, Wallace C. Hood, was general sales manager of the Chalmers Motor Co., the Metzger Motor Co., and the Empire Automobile Co. W. H. Kirkpatrick vice president and field manager, for nine years previously was sales manager for the Peerless Company.

#### Mr. Hood's Helpers.

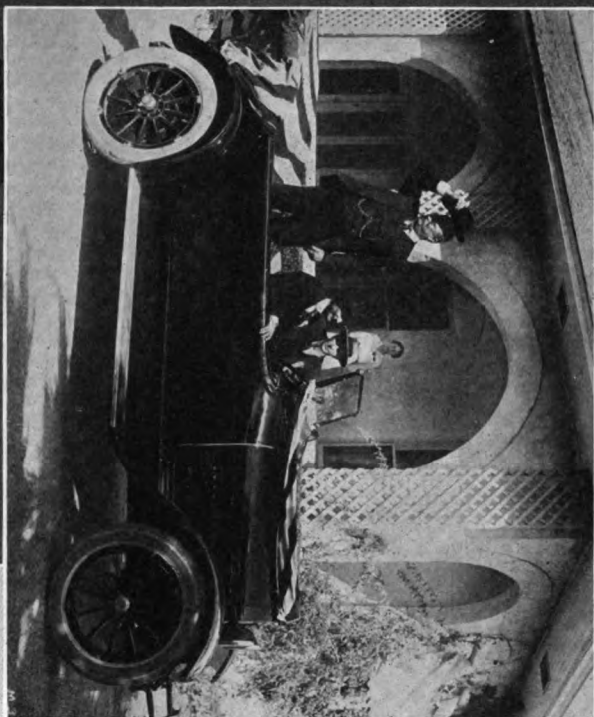
Russell B. Merrill is now director of material purchasing and traffic. He began his career over ten years ago with the Packard Motor Car Co. in their purchasing department and has since been associated with several other large motor car concerns in the capacity of purchasing agent.

Frank M. Eldredge, director of advertising and publicity for the bureau, has had over fifteen years' active experience as an advertising executive.

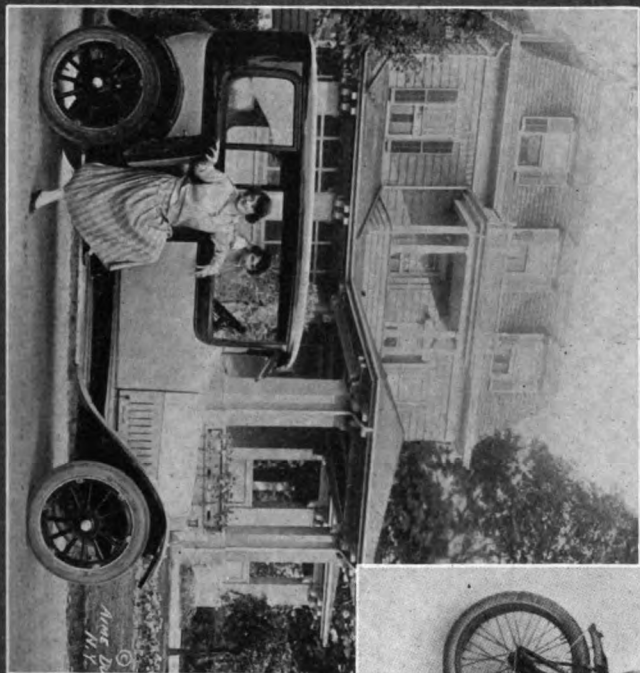
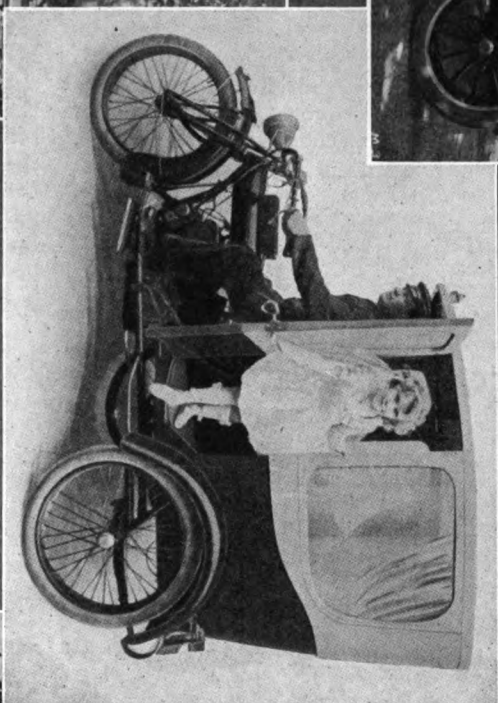
James E. Morgan, secretary and treasurer, owing to his exceptionally wide personal acquaintance and broad experience in the automobile industry, is able to arrange business engagements for visiting manufacturers, distributors and dealers while in Detroit.

A special room for the use of manufacturers, distributors and dealers has been provided, also free stenographic, telephone and other business service.

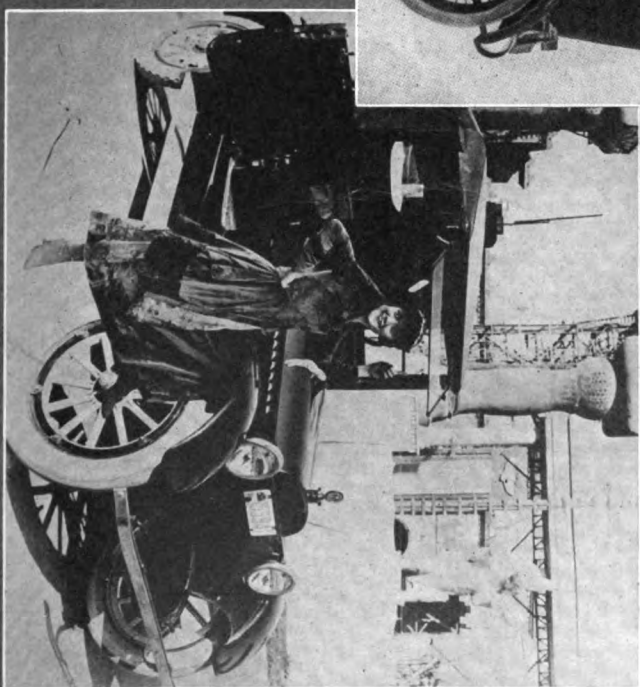
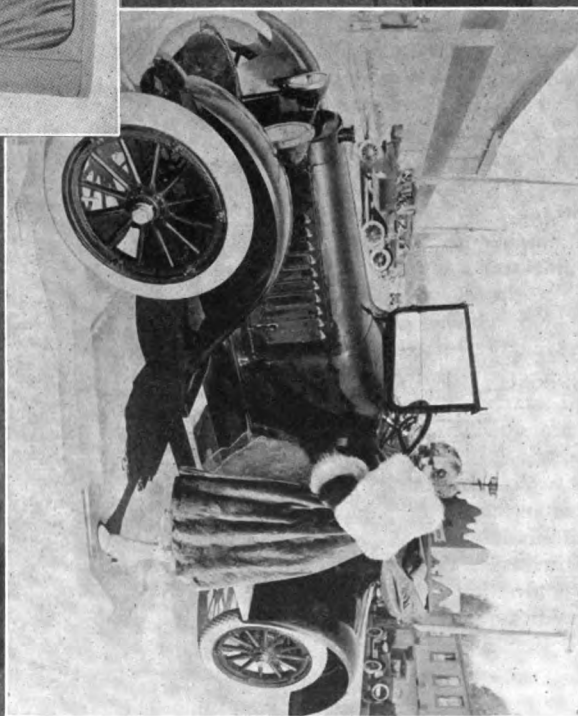




# Some Stars T. R. Cinderella and Their Cars



Upper Left—The Colonel in a Jeffery Six.  
Upper Right—Juanita Hansen and her Chalmers Roadster.  
Lower Left—Anna Fitzu and her Mitchell Six Sedan.  
Lower Right—Constance Talmadge and her Chalmers Cabriolet.  
Center—Cinderella in a Cygnut Rear Car Limousine.





### Would Not Accept Defeat.

A. T. Crawford, Scottsbluff, Neb., is a garageman who has made good. Of course there are thousands of garagemen in this class but not one is a more typical illustration of good business sense and common honesty winning out. It simply happens that Mr. Crawford made good in the garage, repair and auto sales business. He would have made a like success running a peanut stand or in the banking business.

In 1909, Mr. Crawford went into the garage business with large hopes, an empty pocketbook and a winning smile. At the close of the year 1916 the hopes largely were realized, the empty pocketbook has developed into a fat bank account and large property holdings and the winning smile has never come off; it is a permanent fixture. Beginning at the ending, December, 1916, found the Crawford garage completing a 50x80 addition to its present large garage, repair shop and display room. This will give 13,000 feet of floor space for the above purposes. The concern handles Hudson and Chalmers cars and Smith Form-a-Trucks. Sixty-five cars are regularly stored in the garage. There are sixteen employees. During the year, \$65,000 worth of cars were sold and the garage did over \$50,000 worth of business. And Crawford owns the building. Do you blame that smile for not coming off?

### Why He Has Succeeded.

The following letter shows perfectly why Mr. Crawford has succeeded:

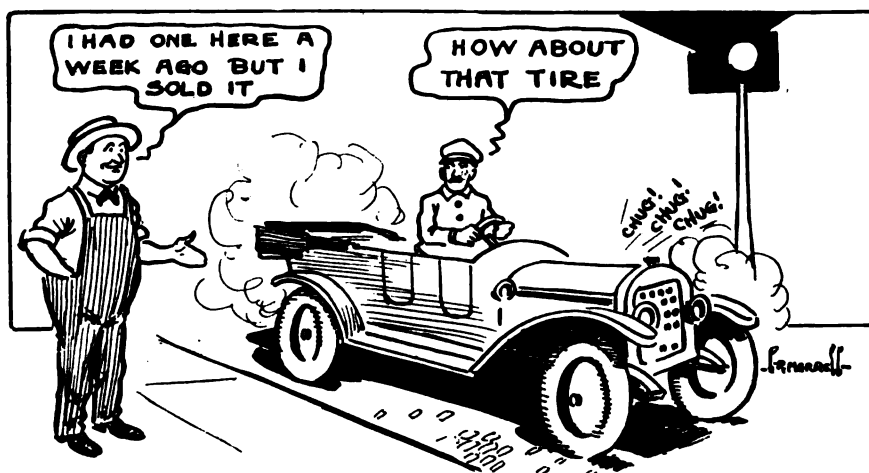
I have been studying with a great deal of interest my past, which up to the present has been forgotten as much as possible.

The cause of my deep thinking is your request for an article on why we have succeeded. That we have succeeded is evidenced by the fact of our growth. How we have succeeded it is possible that I might be able to explain, but why we have succeeded I can only attribute to the fact that we would not accept defeat.

A number of years ago, through a misunderstanding in which I was absolutely right, I was drawn into a fistic combat in which I was beaten to a pulp. However, the fact that the man had beat me unmercifully did not make me give up. I started in to prove I was right and intended to finish what I started. Although I did not start the fight, and from a physical standpoint was whipped, I hung on and fought until my opponent admitted defeat.

Afterwards, this man told a number of people that he had me licked but I wouldn't quit, and that is truthfully the foundation of our success.

We firmly believe in giving the people satisfaction. To attain that end we found it ~~was~~ cheaper to get as near perfect as possible and then make the other man



### Not a Reader of A. G. and A. D.

concede it. We feel that a man who poses as an automobile man should be an automobile man. In that, I mean know and understand his business.

### Learns From Experience.

One of our practices was in the event that a car was brought to our establishment to correct a defect, we proceeded to do so. If it took hours and hours and

fall dead. So we reasoned with him that it was not our fault that he had bought a car with which we were not acquainted, neither was it his fault that we could not get acquainted quicker, so we would charge off a portion of that time as experience, charging the rest to him, with the assurance that if the part that we had remedied failed again we would make it right. Thereupon, we gained that man's confidence and when he bought his next car, you know what kind of a label it had on it.



A. T. Crawford.

hours to locate same, it was finally located and corrected. Then we reconsidered the job. We said, "That should have been located and remedied in a great deal less time. Had we to do it over, we could do it in less time." And then we made ourselves plain to the owner that we had found and remedied his trouble and that if we were to charge him for the time it had taken he would

### A Dealer's Discount on Car Parts.

Complaints are reaching this office to the effect that car manufacturers in many instances do not allow dealers a discount off their list price for car parts unless the dealer happens to be an accredited agent of the particular car manufacturer. The result of this situation would make garagemen and dealers who repair cars supply parts to car owners at no profit to themselves, leaving to them repair work as the only source of profit in the transaction, as car owners are familiar with list prices and have been led to expect them and will pay no more.

On looking into the matter as the result of these complaints we find that the car companies affiliate with the General Motors Company allow a discount to all dealers, garagemen and repairmen, thus enabling these factors to handle car parts at a profit as well as to receive a profit on actual repair work. This rule is a reasonable one and we believe should be adopted generally.

The American Association of Garage Owners will bring the problem to the attention of the National Automobile Chamber of Commerce, and it is hoped that through the negotiations that will follow a standard of practice can be evolved that will result in a uniform discount being allowed to dealers, garagemen and repair shops on all cars. This will enable them to supply any car owner with parts at list price and make a profit.

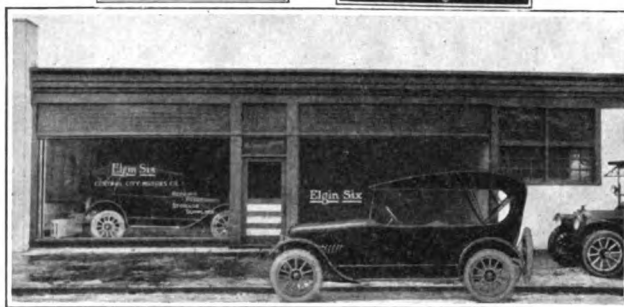
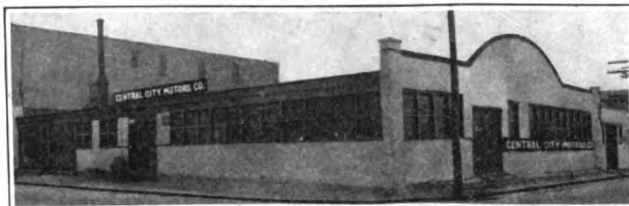
# Live Wires in the Garage and Dealer Field

Elgin Dealers, Garage Operators and Auto Repairers at Syracuse, N. Y.

ONE of the liveliest firms of auto dealers, garagemen and repairers in Western New York state is composed of D. H. Shaw and R. E. Busch, doing business under the style of the Central City Motors Co. They are young men with engineering as well as commercial training, but they specialize in car sales with the Elgin Six as the car of their choice.

The Central Company's garage, repair shop and salesroom are said to be one of the most spacious and modernly equipped of any in the Syracuse territory, fire-proof construction, convenient and fitted up with all of the new devices and accessories employed in the efficient handling of a retail automobile business.

The building measures 165x140 feet. The garage section stores 75 cars and the repair shop can take care of 25 cars at one time. The sales room is 40x35 feet, neatly decorated and supplied with every convenience. The illustrations speak of the modern, up-to-date appearance of the establishment and suggest



The Central Motors Co.'s Garage and Repair Shop at Top.  
R. E. Busch and D. H. Shaw in the Center and  
The C. M. C. Co.'s Nifty, Modern Salesroom at the Bottom.

something of the snap and push of the young men who conduct it.

Messrs. Shaw and Busch are enthusiastic on car sales and firm, convincing advocates of the six-cylinder principle in motor car building. They have a reputation for closing more deals as compared with the number of prospects tackled than any other dealers in Western New York state. "We know our car, we know what car buyers want, and they have just got to buy, that's all," said Mr. Shaw.

Mr. Busch stated that while the firm was somewhat "buggy" on car sales, no other branch of the business is being neglected. "Modern methods, system, efficiency of the highest order and courtesy—these constitute the cardinal principles upon which our business is conducted," said he.

Good advertising has been a business-builder for the Central Motors Co., and the personal and social elements as an adjunct to the successful merchandising of cars, accessories, supplies and services have not been overlooked.

## Gramm-Bernstein Sales Convention



One of the notable sales conventions held in connection with the Boston and Brooklyn truck shows, was that of the Gramm-Bernstein Motor Truck Company, Lima, Ohio.

The convention was held at New York headquarters, 1457 Broadway. Among those who gave addresses were: B. A. Gramm, vice president and general manager of the company; C. W. Moody, manager of eastern and export sales; R. W. Austin, chief

engineer, and R. E. Taylor, president of the R. E. Taylor Corporation; C. L. Horning, chief engineer of the Waukesha Motor Company, and one of the leading spirits in the S. A. E., and Arthur M. Laycock, chief engineer of the Sheldon Axle and Spring Company.

### Overland Profits.

Net profits of the Willys-Overland Company, for the twelve months ending Dec.

31, were \$11,335,000. Net profits for the first six months were over \$7,000,000, the comparative decrease of the last six months being due wholly to the freight embargoes.

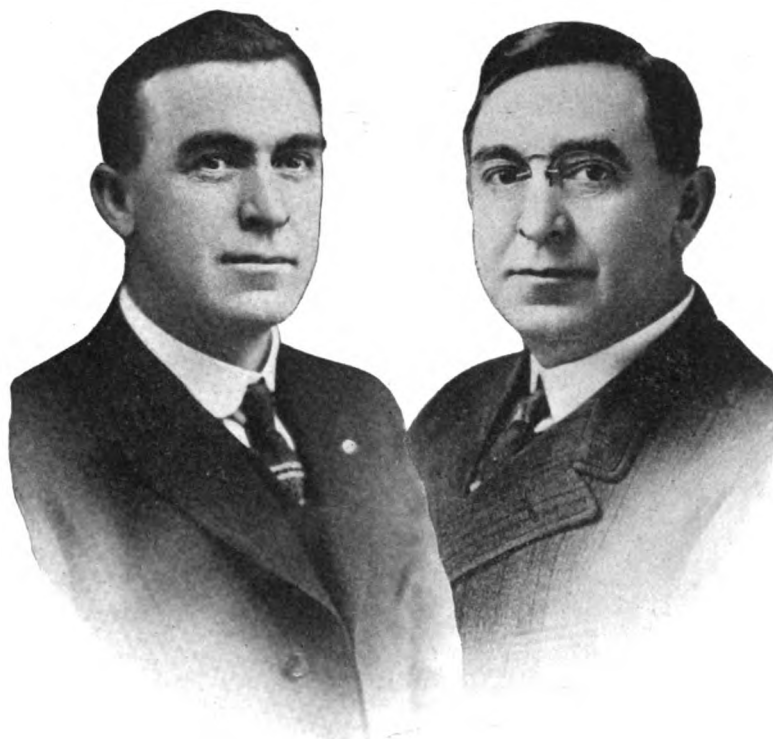
There is \$37,000,000 of common stock outstanding, of which \$15,000,000 was issued during the last three months of the year. The dividend amounts to \$6.63 per share, as compared with \$46.76 on the \$21,000,000 of common stock for 1915. This comparison must be made with the knowledge that about \$7,000,000 of the earnings were devoted to additional plant to allow an output of 200,000 cars per year.

### Makes an Australian Record.

On the eleven mile hard sandy beach at Southport, Queensland, all Australian speed records for stock model cars with special racing bodies have just been broken. Piloting a Studebaker Six, Driver A. Jewell bore off the honors of the meet by speeding a mile in forty-four seconds, with F. Z. Enger, driving an Overland Four, only three-fifths of a second behind.

The Kansas lien bill failed to pass. Gird for a bigger drive next time, brothers.

## Men Who Made the Auto Industry



EDGAR and ELMER APPERSON

**B**ACK in 1893, the first Apperson automobile was completed, and on July 4th of that year made a run from Kokomo to Peru, Indiana, a distance of about 20 miles. In 1895 Elmer and Edgar Apperson designed and built the first double opposed gasoline motor made in the world. That achievement marked an important epoch in the history of the automobile industry. It was the birth of the multiple cylinder motor—the forerunner of the multiple cylinder six, eights and twelves in general use today. In that same year, 1895, the first automobile race in America was held, in which the Apperson competed. It was then that a cash prize was awarded to the Apperson brothers for having constructed the best designed gasoline engine for use as a motor car power plant. An important step was taken in 1901 when the Apperson Brothers Automobile Company was formed with an original capital of \$23,000. The years following marked the beginning of the rise to greatness of the automobile industry and with it came added honors to the Apperson brothers and affluence to the Apperson enterprise. The 1917 output of Apperson cars will be 4,500.

# How Frelingheusen Won Out

## Beginnings of a Method of Using His Personality Which Doubled the Business of an Iowa Garageman and Auto Dealer

LAST year a car owner was taking a transcontinental trip and ran across a boyhood friend running a garage in a good-sized town in Iowa. The garage owner had an automobile agency, an accessory stock, a repair shop and was exactly in the position of the thirty-car garageman described further along in this article. He could not figure he was making much money, but had decided to build a larger garage.

The car owner had a wide experience in business and decided to stop a day or two with his friend. Before they had finished their greetings and the story of the garageman's business, a car was driven out by an employe, the owner not being a regular customer. The garageman tossed a business card in the tonneau, explaining to his friend that it might bring in some regular business. Except that the wording is changed, the garageman is now ashamed of it, the card looked exactly like No. 1.

The garageman explained also that he felt free to distribute the cards widely, as the printer had cut his charge in two owing to having misspelled the word "Postoffice."

### Poor Advertising.

"Look here, Bob," said the car owner, "you are just as wrong in distributing these cards as you would be in doing a wilfully poor repair job. Every man who reads the card will see the misspelled word and gain a poor impression of you, and, consequently, of your garage and everything that comes out of it. This town must have a half-dozen good printing offices. The man who set that job up shouldn't be called a printer anyway. It looks as though it was set up with shoe pegs and printed on a cheese press. Let's go and see a good printer."

They did so, and the next morning the garageman had a supply of cards looking like No. 2.

One look at the new card and without a word all the old cards were thrown into a scrap can.

**James R. Frelingheusen**  
**Proprietor and Manager**  
**QUALITY GARAGE**      1824 La Crosse St.  
 Four Blocks S. of Postoffice  
**Square Deal to All is My Motto**

No. 1

Telephone Main 666

**Quality Garage**  
*The Name Fits*

1824 La Crosse Street    J. R. Frelingheusen  
 Missionville, Iowa

No. 2

The garageman had a really good accessory stock, fairly well displayed in a show room where he had a sample car. As the two friends were talking in this room a man drove by in an ancient boat of an eleven-year-old model and the ga-

"Well, he says he has never ridden in one of these cars and don't know whether it is even as good as his old car," answered the garageman.

"But, Lord Harry, man, why don't you give him a ride in this one? Afraid you will make it second-hand? Let's go see him and let me do the talking."

This they did, with the result that Mr. Ingalls agreed to ride in the car the same day, to let the garageman use it as a demonstrating car for two weeks, then to drive the car himself and to pay full price for it in perfect condition and the car suited him.

The first ride was a success, Mr. Ingalls himself driving on the homeward journey. Then the garageman's friend got busy. He saw to it that the car was used every day, with a prospective customer at the wheel or in the tonneau, or both. Instead of a day or two he stayed a week and helped sell three other cars. Some of the deals were on partial payments, but a banker bought the notes almost at par.

### Cars Ordered by Wire.

Four cars were ordered by wire, but the factory answered the shipment might be delayed because of a freight embargo. The friend wasn't stopped a minute. He figured the freight rate would be more than passenger fares to the factory. A little dinner with the local buyers induced two of them to drive the cars home from the factory, while the third agreed to accept cross-country delivery. It was to be a jolly party and the garageman induced another resident to go along and drive a car back. On the fifth day the four cars were delivered to the buyers at Missionville and a demonstrating car, practically paid for, was in the hands of the garageman. The trip was followed by others, seventeen cars being sold as compared with three in two years

previously.

The friend was gone before the first cars arrived, but on the last day of his visit he was again talking with his friend when a car went by, its cylinders hitting

*Dear Jim:—*  
*You've got a good car but it won't stay good very long unless it is overhauled.*  
*I know all about your bring stung but want to prove I won't sting you*  
*Here's a proposition. Bring your car in and let's take a look at it. I will tell you about what it will cost to put it into good shape. If you agree, I will go ahead, writing you beforehand to stay in the repair shop and let how we do it.*  
*When the job is done, you run the car a week. If you say it is a good job, come in at the end of the week and pay the bill.*  
*If you don't like our work or think we have stung you, keep this letter as your receipt in full.*  
*You to be sole judge and jury.*  
*Yours friend,*  
*J. R. Frelingheusen*

No. 3.

rageman said:

"There goes Mr. Ingalls. He's got money to burn and ought to buy a new car, but I can't convince him."

"Why not?" asked his friend.



with a regular irregularity that spelled carbon in capital letters.

"There's Jim Crosby going by. Some one stung him a year ago and he won't have his cylinders reground. Thinks all garagemen are highwaymen," said Frelingheusen.

Being assured that a good job could be done in the repair shop, the friend said: "You haven't a typewriter and wouldn't be able to use it if you had one, but let's see if we can't get Crosby to bring his car in for repairs."

The result was the Number 3 letter, written by Frelingheusen:

It brought Crosby in the next day, the

And he had answers to nearly all of them when his friend returned. The letters to friends were based on No. 4 and those to whom a more formal letter had to be written were about like No. 5.

Some long talks followed the friend's return to Missionville. In substance, it was agreed that the garage business was a good deal like the boy who was growing so fast that today's long trousers were tomorrow's knickerbockers. The growing boy is not at all apt to have a well-fitting suit of clothes. Nor is the progressive garageman and auto dealer apt to find his thirty-car storage space enough for the demand.

on accessories is barely twenty-five per cent; the net profit being considerably less.

All of which brings the garageman face to face with the fact that his thirty-car garage is too small. It is absolutely essential that he increase the bulk of his business if his thirty-car garage is properly manned. Month after month he finds his garage is full, that he seems to be selling his share of accessories and cars and that his repair shop is busy; and at the end of the month he finds his share of the profits has gone into the business and is, in any event, less than the amount he pays any one of several employees.

This is not a random statement. It is the actual experience of thousands of garagemen and auto dealers. One of the best managed garages in Illinois did a business of \$200,000 last year and its net profit was four per cent. The actual experience of the average garageman whose business is growing is that his net profits must all be left in the business.

#### Come Cut Figures.

He discovers almost at once that it will cost but little more in overhead charges to store sixty cars instead of thirty, to sell \$20,000 in accessories instead of \$5,000, to own a demonstrating car instead of selling by a single salesroom sample; in general, to fit his plant to do all the business possible with the smallest necessary increase of pay-roll and overhead charges.

And just at this point a great big danger sign confronts the garageman. The plunger sees double the business in sight and prepares to double the size of the plant. The AMERICAN GARAGE AND AUTO DEALER has tabulated the experience of hundreds of garagemen and finds the plunger loses as often as he wins. If you know your business thoroughly; if you

Dear John:—  
 I'm busier than a hen with one chicken.  
 That's my reason for writing instead of calling.  
 I have figured out I will have more spare  
 time and certainly make more money by doubling my  
 business.  
 I haven't had a dollar's worth from you; probably  
 because I haven't asked for it. Now I am asking.  
 Will you call me up on the 'phone before this  
 letter leaves your hand? I want some or all of  
 your business and will prove you want my service.  
 Your friend,  
 J. R. Frelingheusen.

No. 4.

car was overhauled, there was a clear \$16 profit in the job and it ended in Crosby giving up a rented garage and storing his car in the Quality Garage.

Frelingheusen's friend was not through with suggestions. He was an ardent believer in using one's personality in getting business. He believed a form letter, manifestly duplicated, was the poorest way to get business and that personal solicitation was the best. Next to personal solicitation came a personal letter showing the personality of the writer.

In order not to appear fossilized, he favored first, a type-written letter, manifestly applying only to the recipient. Next, he favored exactly the same letter, written in long-hand. To friends or close acquaintances, except big business men, he preferred a long-hand letter, provided it were written legibly.

#### Personal Letters.

The friend agreed to stop again on his return trip, but first had Mr. Frelingheusen write two letters for two lists of prospects, all the letters to go in long-hand and each to be changed in a sentence or two to make a personal appeal. The difference in the lists was largely based on whether Mr. Frelingheusen called the addressee by his first name or Mr. ———.

Mr. Frelingheusen began at once writing the letters and sending them out daily.

There are several consequences of this state of affairs with the garageman, auto and accessory dealer and repairman. One of the first consequences explodes the

Mr. ———  
 Missionville, Ind.  
 My dear Sir:—  
 My business has increased to a point where I am  
 forced to consider enlarging my garage.  
 I want to put up a building which will be a credit  
 to the community but naturally want some assurance of  
 enough added business to make it pay.  
 Of course I want your business or I wouldn't  
 waste your time and mine with this letter.  
 Will you call me up on receipt of this and tell  
 me when to call.  
 Very truly yours,  
 J. R. Frelingheusen.

No. 5.

prevalent opinion that every man in the automobile business is on the straight road to wealth. In spite of the contrary belief, the automobile business is one of small rather than large profits. The highest possible net profit on a popular make of car is \$40. The average gross profit

know it is managed economically; if you know you are getting the best possible results with your smaller business and that a larger business is in sight, then plunge. Take a header from the start and you will find the water is fine. Also you will make four times as much net

money on the doubled business as on the smaller business. You will find that your overhead charges have increased but little in amount and have been almost cut in half in percentage in the doubled business. If your overhead is \$5,000 on a \$25,000 business it probably will not be more than \$6,000 on a \$50,000 business.

And there is the plunger's chance of success; to increase the bulk of his business without a corresponding increase of overhead charges.

But the consistent money-maker, be he a plunger or a conservative, seems to be the man who knows all about the water before he makes his plunge.

He finds exactly how he stands; not by the aid of his regular bookkeeper, but by an outside, disinterested accountant. This is the only basis from which to judge.

The way to do is to sit right down with the accountant and find what the figures mean. It has been an eye-opener to many a garageman.

#### Profitable Customers.

Take the individual accounts, for instance. You think of John Smith as one of your good customers; a little slow, perhaps, but profitable. But the accountant is apt to show that you are losing money on John Smith; that in self-defense you must change your methods of dealing with him or drop him as an undesirable customer.

It looks like running amuck with one's business, but there are certain customers who always are a source of loss and each of them should be more or less politely told to take his business elsewhere. Of course, no one should be given credit unless entitled to it. But the dead-beat is by no means the only source of loss. Your most unprofitable customer may be a warm, personal friend who simply makes a habit of giving the other man the tarred end of the stick.

And now, the thirty-car garageman finds he should adopt a rigid policy of profit-making on all these undesirables or drop them completely. It would seem the part of wisdom to do this thoroughly, replacing them with first-class customers up to his capacity. It also seems wise to do all this and fill the garage up to the point of overflowing before beginning the addition or the new building.

#### Here Comes the Doubt.

Right here is where the average garageman with a growing business is in doubt. He has a pleasant personality, a decided wish to give good service, a wide circle of friends. Without special effort, with little or no promotion efforts except personal solicitation, he has worked up a business which is crowding him. His problem is to first increase the quality of his customers and then to learn whether he can add more first-class ones than his present quarters will accommodate.

The experience of hundreds of garagemen is that the best single method of get-

ting new business is by personal solicitation. The problem would be a simple one if the garageman or dealer could see each prospective customer and talk business. This is manifestly impossible, as the average garageman is tied down closely to his place of business. He can use every chance of talking with prospects, but he must find other means of reaching some of them.

#### Indirect Advertising.

Indirect ways of doing this are by newspaper and signboard advertising and through the mails. The average garageman is not an advertising expert nor an experienced mail-order business-getter. Usually he turns some poor copy over to a printer and lets him do his worst.

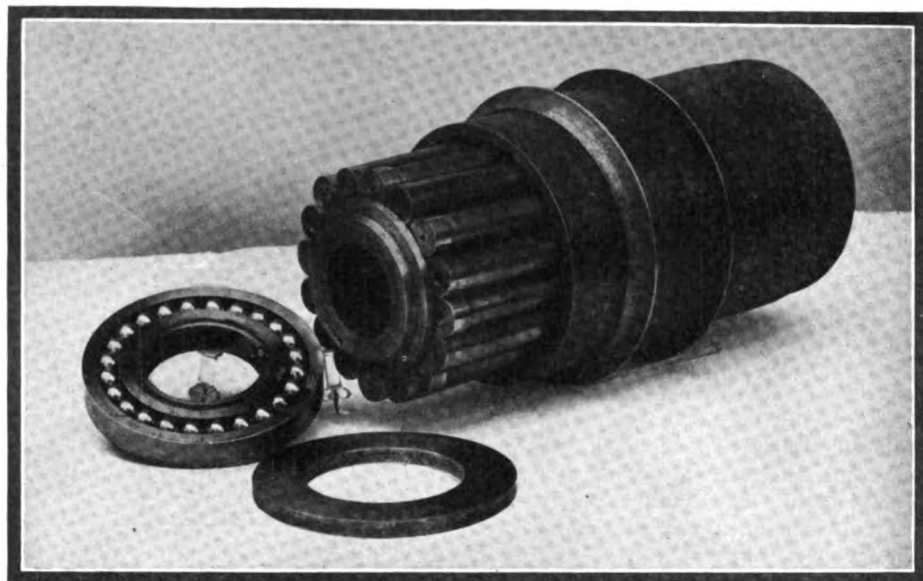
The net result of Frelingheusen's long-hand letters and his talks with his friend was a real campaign to settle the approximate new business that could be obtained and to build a modern garage capable of caring for it.

Some of the methods used will be shown in succeeding issues of *AMERICAN GARAGE AND AUTO DEALER*.

#### Frictionless Roller Bearing.

A new roller bearing, simple and almost revolutionary in mechanical construction, has been invented by a California man, patented and has been given thorough tests by leading mechanical engineers in different parts of the United States. This bearing requires no lubricant, and in it friction is reduced to the minimum, therefore no heat or crystalization. It differs from other standard bearings, being without cage, cone or rivets, in fact no sliding contact, every part being rolling. The bearing consists of three principal parts—the sleeve, rolls, and outer casing of box, the whole forming a complete unit.

The anti-friction principle, which eliminates the need of lubrication, is accomplished by the separating of the bearing rolls with the spacing rolls; the latter only carrying their own weight, and revolving in a direction opposite to the movement of the bearing rolls, there being no sliding contact, but an entirely free-rolling motion to both bearing and spacing rolls. Thus there is no heat created and wear is prac-



#### Hy-Watt Battery Company.

The Cleveland Battery & Electric Company has been forced to change its name through the popularity of its leading output, the Hy-Watt battery. So many letters, telegrams and telephone calls came for the Hy-Watt that a continuance of the old name was confusing. Hereafter the company, with no other change except in name, will be the Hy-Watt Battery Company.

#### Addition to A. C. Spark Plug Plant.

Champion Ignition Co., Flint, Mich., has been compelled by its increasing business to add another story to its plant, adding 10,000 square feet of floor space.

Eighteen months ago the A. C. Spark plug home had 27,000 square feet of space. Now it has 80,000 square feet.

tically eliminated. The end thrust is provided with a two-point square ball race, that also requires no lubricant.

An automobile equipped with this bearing has been run more than 20,000 miles, no lubricant used, nor after this long use did the rolls show evidence of wear.

A peculiar quality of this bearing is that it can be used anywhere a bearing is needed—a baby carriage, a trolley wheel, an automobile or a locomotive. Careful tests have demonstrated that this roller bearing conserves fifty per cent of energy. The master mechanic of the Pennsylvania Lines made tests which showed that the roller bearings saved energy amounting to 78.8 per cent over standard truck bearings.

A company is now being organized to manufacture these bearings on an extensive scale, Chicago parties being leaders in the movement.

# Mechanical and Engineering Problems

*THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and now consulting engineer with the Western Electric Co. When shop information is desired, write Mr. Hinrichsen, care this office.*

## Fire Damages Result from Back-firing.

Firemen were driven back like soldiers from an artillery attack, and the garage was destroyed with a loss estimated at \$175,000. The entire bombardment took place in little less than an hour after the first motor tank exploded and sent a spray of gasoline over the other tanks, which exploded in rapid succession.

"The fire started," said William Long, a mechanic, "by the backfiring of a carburetor on a machine where I was working. The tank of the machine was being filled at the time, and the backfire set off the fumes."—*Chicago Tribune*, Dec. 21, 1916.

The above clipping should give the average garage owner food for thought. How careful are you? How careful are your men?

"The fire started by the back-firing of a carburetor on a machine where I was working. The tank was being filled at the time, and the back-fire set off the fumes."

Just a little carelessness—a little too much hurry—cost \$175,000.

Do you ever do this or something similar? You may get away with it several times, but sooner or later, if you keep it up, there will be a little item in the paper about how John Doe's garage was destroyed by fire, and perhaps will be followed by John Doe's life history, good characteristics and what a loss he will be to the community, for fifty per cent of such accidents are fatal to the ones who cause them.

An experience of my own has made me extremely careful to avoid accidents of this kind.

Just after dark one evening a car drove up to the garage for gasoline. This car was equipped with gas headlights and oil side and tail lights. The "oil and gas" man at once began filling the tank. It was a hot summer night and the gasoline evidently fumed freely, for just as the tank was full, there was a flash and instantly the car was in flames. The man who was filling jumped out and jerked the gasoline hose from the filling tank with him. The gasoline left in the hose was, of course, scattered over the seats to give the fire fresh fuel.

In twenty minutes the car was a wreck, and all because no one thought to extinguish the lights before filling.

We all of us do fool things like this, at least once in a while, and it is nearly always just thoughtlessness.

Make it a rule to never bring gasoline near an open flame, not forgetting that a running engine often produces an open flame, and you will have reduced your fire hazard at least one-half.

\* \* \*

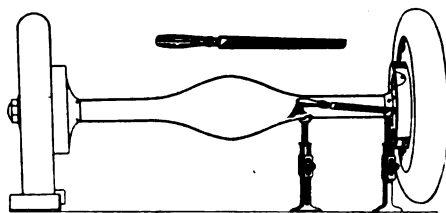
## Short Method of Cutting Down Brake Drums.

I would like to know of some short method to cut down the width of brake drums. Every once in a while we have a car come to us which has a brake drum which extends so far to the inside it rubs on the brackets which hold the external brake in place. This not only makes a disagreeable squeaking but in some cases has made it necessary to replace these bracket supports.

The only method we know of is to take off brake drum and put it in a lathe and dress off the edge of drum until this condition is relieved. This operation takes three or four hours' time, as we don't have a lathe that will swing an automobile wheel over the ways, making it necessary to remove drum from wheel.

**Question.**—What method do you recommend? C. W. E.

**Answer.**—This job can be done in less than thirty minutes as well as can be done on the lathe. The mode of procedure is as follows: Assuming that it is the right



hand drum that is at fault (this I have found to be the rule), securely block the left hand rear wheel, then jack up right side till right wheel clears floor; then set another jack within one-half inch and on the inside edge of brake drum, raising jack till head is equal distance from floor as lower side of axle housing.

Then get an old file, grind off end, giving some clearance like a lathe tool. Everything ready, start motor, set gear lever in reverse, let clutch in, which will revolve right wheel in reverse direction, taking firm hold on file; rest on head of jack, force against edge of drum. A sixteenth of an inch of metal can be shaved off edge of drum in fifteen minutes by this method. The accompanying sketch will make this explanation more clear.

\* \* \*

## Accelerating on Battery and Magneto.

**Question.**—I had great difficulty to get action on a car in my shop. I start on bat-

tery and switch on magneto as soon as possible, and want to know why it is that the engine will not accelerate on battery as easily as it does on magneto. I. M. L.

**Answer.**—When starting the car battery is used because the engine needs to be cranked only once or twice and it will start, whereas if it were started on magneto the engine would have to be cranked considerably in order to bring up the voltage of the magneto high enough so that a spark would be produced at the plugs, whereas, when starting on battery it is only necessary to crank the engine past the sparking point so that the battery current is interrupted. The moment the current is interrupted the spark is produced. The reason that the engine runs slower on battery than on magneto is that on magneto the spark is produced instantly, whereas on battery the spark lags considerably, because it requires some time before the spark builds up after the contact on the interrupter is made.

\* \* \*

## Setting in Car Wheels.

**Question.**—How much do ordinary cars "toe in" on the front wheels? Are the wheels set so that they run straight forward, or are they set in a little? What is the reason of setting in the wheels?

S. L. H.

**Answer.**—In ordinary practice front wheels "toe in" one inch. That is, the distance between the wheels is one inch smaller on bottom than on the top so that the spoke that is pointing downward is perfectly vertical, as the spokes are dished; that is, they are slightly inclined from the outside rim inwardly toward the hub, which makes the wheel resemble a flattened cone. This is done because it gives the front wheels unlimited elastic properties when turning corners. Setting in of a front wheel is accomplished by drawing up on the connecting link which connects both the front wheels to the steering gear. Wheels in ordinary practice are set in one-quarter inch; that is, the wheels are one-quarter of an inch nearer together in front than in the rear of the front wheels. This is done so that when in a sandy road the wheels will not be torn apart by the action or pressure of the sand upon the sides of the wheel.

\* \* \*

## STOPPING THE KNOCKS ON AN OLD FORD.

**Question.**—I would like for you to give me a little information. I have in my place a 1914 Ford on which I adjusted the bearings, replaced the piston rings and examined the wrist pins, but the car knocks. When it runs idle it will run nice for a minute or so, then it will knock six or eight times and then stop for a minute or

so. On high speed it is not very bad, but pulling on low it is very noticeable. Please tell me what I should do.

E. D. W.

**Answer.**—You are just a little indefinite as to details. Did you adjust all the bearings or just the lower connecting rods? From your description of the knock, I should judge that one of your main crankshaft bearings was loose—probably the front one. Of course, it is largely guesswork as I do not know just how far you have carried your repairs. The following points may be mentioned: 1. Main bearings. 2. Connecting rod bearings—crankshaft end. 3. Wrist pins. 4. Camshaft bearings. 5. Loose flywheel. 6. Piston slap (due to pistons being too loose). 7. A defective transmission gear.

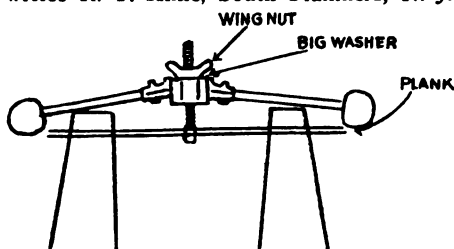
Of the above points, the most probable are points 1, 2 and 4. The remainder are possible but not probable except the wrist pins and you have examined them.

Go over it carefully in the order listed and if you do not find it, write me in detail just what you have done and I can probably locate the seat of the trouble.

\* \* \*

#### A DEVICE FOR STRAIGHTENING A DISHED WHEEL.

The above rough sketch shows a cross-cut view of a device for straightening a wheel that has become unduly dished, writes R. T. Kline, South Plainfield, N. J.



Upon taking the wheel from the car loosen the flange bolts that go through the spokes and place across two ordinary carpenter's horses. Secure a long bolt, flat washer, nut and a plank. Bore a hole in the middle of the plank to take the bolt; run the bolt up through the plank and hub of wheel, and screw the nut down on the washer as shown. When the wheel has been straightened up, tighten the flange bolts and the wheel will stay in its normal position when pressure is removed.

\* \* \*

#### The Amazon Policy.

The Amazon Rubber Company at Akron are strong advocates of persistent dealer co-operation, and their policy binds the factory and the dealer very closely together.

Mr. C. J. Hazen, advertising manager, says: "Our dealers are a vital part of our organization—to be an Amazon dealer is to be an integral part of the Amazon Rubber Company. We believe, in a word, in making the Home Office, the Manufacturing Department and the dealer the Sales Department.

For after the dealer has laid in a

stock, then is the time when real, hand-in-hand co-operation is needed most. And we spare no efforts in helping the dealer turn over his stock in the shortest possible time, so that he may restock and resell continuously to the greater profit for both himself and for us.

"And at the same time we are helping him move his stock, we are keeping his name prominently before the buying public, directing them to his store not only for Amazon tires, but for any other accessories, supplies, etc., for which they are in need.

"Thus we are helping him build up his business—we realize that the larger he can build his business, the more of our product will he sell—to the benefit of both of us—and so we help him build, willingly.

"Our plan of having one dealer only in a definite territory assures that dealer of getting the full benefit of our advertising assistance—if we had three dealers in that territory and spent three times as much for advertising, his share of the business created would not be one-third of the volume he secures by our exclusive agency plan.

#### Help the Dealer Move His Stock.

"Our work, then, is to help the dealer move his stock, and with this end in view we have prepared a line of advertising material that is, we believe, stronger and more effective than any that has been gotten up in the past or that will be made up for some time to come.

"All this we furnish to the dealer at absolutely no cost to him, feeling as we said, that he is virtually our sales department and should not be asked to stand even a portion of the expense.

"When we establish a dealer with exclusive selling rights we want him to be permanent—we want him to take advantage of the business and good will that we create for him, for years to come, secure in the knowledge that it will grow greater each season.

"And we want the dealer to take Amazon Products and push them as he would a product of his own making—for one-sided co-operation makes it doubly hard to achieve success.

"Another point of our policy is our concentrated advertising. We are not forcing our distribution by using national publications to consumers before we have distributing agencies, neither are we over-stocking unstaple dealers on the promise that universal demand will be created thereby.

"What we are doing is selecting sound, progressive dealers who know a meritorious product when they see it, and to these men we are granting exclusive sales rights in their territory, and as soon as their stock is in we lay

out and follow through consistently a concentrated advertising campaign which covers only their territory and covers it completely and effectively. As the dealer's name is always connected and interwoven with this advertising, it brings him more actual business than could be secured in any other way.

"After our distribution is extended to that point where universal demand can be filled at once—when a prospect can simply drive around the corner to the Amazon Agency—then our national campaign will be launched and Amazon Products will be favorably known the length and the breadth of the land.

"Progressive dealers can make no mistake by connecting with us, for with an unusually meritorious product and unstinted continuous co-operation, the Amazon Agency is a winner."

## The Markets

**General.**—Spring business opened with a rush which has now accelerated with every spurt of good weather. The war situation has created more or less uncertainty, but the predominating idea is that general business conditions will continue good, while special industries will obtain added benefits and others may suffer. The auto field has not been affected unfavorably thus far, car sales walking right along and nearing the galloping stage, with all other activities in the trade keeping pace. Price changes are frequent and many, mainly shifting to a higher level as the result of increased demand for materials for war and other purposes. Nothing of especial note, calling for extended treatment, is observed.

**Metals.**—Iron and steel are firm at the present high level of prices on a continued heavy and persistent demand, while zinc, copper, aluminum, brass and lead are active and firm under war and the ordinary industrial demands. Some of the metals, particularly copper and brass, are in big demand for export.

**Scrap Metals.**—This is a rather dull market, with the greatest demand centered upon cast aluminum and brass chips. Prices now being paid garagemen and others by dealers and brokers are as follows:

Heavy copper, 26½¢@27¢; heavy copper wire, 26½¢@27¢; light copper, 23½¢@24¢; red brass, 23¢@23½¢; red car boxes, 20½¢@21¢; brass clippings, 19½¢@20¢; red brass borings, 20½¢@21¢; yellow brass turn. and borings, 17¢@17½¢; heavy brass, 17¢@17½¢; light brass, 13½¢@14¢; medium brass, 14½¢@15¢; auto radiators, 11½¢@12¢; zinc, 7¢@7½¢; lead, 8¢; lead dross, 5½¢@5½¢; battery plates, 5½¢@5½¢; No. 1 pewter, 34¢@35¢; block tin pipe, 46¢@47¢; solder joints, 10¢@10½¢; old nickel, 18¢@19¢; new aluminum clippings, 48¢@49¢; aluminum borings and turnings, 22¢@24¢; cast aluminum, 34½¢@35¢; mixed babbitt scrap, 9¼¢@9½¢; copper shells, 7¢@7½¢.



# The A.A.G.O. and its Activities

## AMERICAN GARAGE AND AUTO DEALER

Official Publication of American  
Association of Garage Owners

NATIONAL HEADQUARTERS

55 W. JACKSON BLVD., CHICAGO

Telephone Harrison 5672

Branch Offices, New York and Detroit



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### DEPARTMENTAL BUREAUS

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Employment Mechanical Legal Sales  
Account's Cost Find's Purchasing Information

## Car Owner Influences Defeat Ohio Garage Bill.

Field Representative A. P. Meng, of the A. A. G. O., writes National Headquarters that the Ohio garage lien bill is dead, beaten in committee by car owner influences represented by President Chas. C. Jones, of the Columbus 'Auto Club, Chas. A. Mooney and others. They took the position that H. B. 484, by Representative Marker, as printed in our last issue, would give the garagemen an undue advantage over car owners, whereas the bill simply extends to the garagemen the same rights that other classes of business men enjoy under similar circumstances. There was nothing in the bill that any honest car owner could properly object to.

Representative Marker made a gallant fight for the garagemen and Mr. Meng found a strong sentiment among the senators and representatives in favor of the legislation. Its defeat can be attributed to lack of stronger organized effort on our part and a misapprehension of the entire situation by the motor club leaders.

Mr. Meng writes: "Car owner leaders stood in their own light. If they persist in their present attitude they will force garage owners to do a strictly cash business. As the garageman now loses his lien as soon as the car passes out of his place of business, his only safety will be to hold the car until the charges are paid. This would work a hardship on honest car owners and could be properly blamed upon the leaders who have defeated needed garage lien bills. The work done this session, however, will not be a loss, but will make success easier next session. The A. A. G. O., state and local associations

and garagemen in general should get ready for a successful drive next time."

## Oklahoma Lien Law Wins.

Sam Pledger, Oklahoma City, Okla., member of the A. A. G. O. advisory committee, sends us the cheerful news that the lien bill has been passed by the Oklahoma legislature and is now a law. He writes:

"We put over the lien law, which not only applies to automobiles but to personal property of every description. Many of us operate general machine shops and needed a wider protection. The law that we got leaves out the words 'motor vehicle' and uses the words 'any kind of personal property,' and gives us a lien on any machine or article repaired or for the furnishing of parts or material.

"We have in our local association 35 members and the automobile mechanics of the town are also organized for educational purposes and are auxiliary members of our association.

"Many of our members are in favor of a state law requiring all automobile mechanics to stand a state examination and secure a license, and requiring the garages to give a five thousand dollar bond. This would eliminate the monkey-wrench and curbstone repairing. In my estimation, there is no trade under the sun with less protection and no one that is abused any more than the automobile repairman.

"Business is exceedingly good in this section of the country, mechanics are few and it is hard to get the garagemen to come to the meetings regularly, but we have some very enthusiastic workers that I think will stick and spend their money until all the wrongs have been righted. We are strong for the national organization and will do anything we can for the cause."

## Illinois Garage Lien Bill Passes Senate.

S. B. 197, by Senator John Dailey, backed by the united garage interests represented in the state—A. A. G. O., N. A. T. A., G. O. of I., Chicago G. O. A. and other local garage bodies—has passed the Senate and is now before the House. Important concessions were granted by the big dealer interests, but the success of the bill will represent a start in the direction of adequate protection for the garagemen. The fight has been skillfully led by Herman E. Halbert, legislative chairman of the state association.

Leisure & Tomlinson, Kewanna, Ind.: "Balance due from —, \$21.10, has been paid in full. Appreciate your good work very much."

## Garage and Retail Auto Industry to President Wilson.

At a special meeting of the Board of Directors of the American Association of Garage Owners (A. A. G. O.), held at the National Headquarters in Chicago, April 10, 1917, the following was adopted:

WHEREAS, the Imperial German Government has forced a state of war upon the government and people of the United States, and

WHEREAS, it is the duty of all patriotic citizens of this free land of ours to respond to every call of duty in the present crisis, be it

RESOLVED, that this Board, speaking for and in behalf of the retail and service branch of the automobile industry, which is the third largest in the United States, express the conviction that the President and Congress may with the deepest confidence rely upon the class of citizenship embraced in the garage and retail motor trade for every assistance they are capable of rendering in mobilizing the resources of the country, transporting them—either man power or supplies by automobile when desirable or necessary in filling the ranks of the army and navy from among their numbers, and in such other ways as may be open to them as a class, as well as in common with other citizens, in the great task of maintaining the honor of the flag, in bringing defeat to the German arms, and in helping to establish the democratic principle of self-government and a lasting peace throughout the world. Be it further

RESOLVED, that a copy of this preamble and resolution be sent by Secretary Carr, of this Association, to President Wilson and to the Chairmen of the Foreign Relations Committee of both Houses of Congress.

## Some Specific Benefits.

M. S. Matteson Garage, Unity, Wis., writes: "R. R. B——, Douring, Wis., has paid his bill in full, so send no more collection letters. Many thanks." Other garagemen and dealers report collections as follows: Water Street Garage and Machine Shop, South Brownsville, Pa.; E. Koontz & Sons, Leesburg, Ind.; Jap's Machine Shop and Garage, Redwood Falls, Minn.; Lamberson-Hunt Co., Oscaloosa, Ia.; Ford Garage, La Grange, Ind.; Metzger Bros., Berlin, Wis.; A. W. Kear & Son, Vernon, Mich.; C. E. Stoehr, McKeesport, Pa.; City Garage, Lakeland, Fla., and many others, all since last issue of the journal, the amounts being from \$7.10 to \$88. It pays to be an A. A. G. O. member. A quarter million dollars collected by this system.

Thompson & Son Garage, Lawrence, Mich., received \$28.60, a deposit due them

from the — Mfg. Co., Detroit, which had been hung up several months. "Nothing doing" until the Association took it up for them.

A. C. Bidwell, the International Automobile League, Inc., and the International Auto League Tire Co. were put out of business by the garagemen co-operating with the A. A. G. O. and assisting the National Vigilance Committee of the A. A. C. W., thereby protecting the trade against future losses; \$3,000 in fines were also assessed.

### Overland Advanced Prices April 1.

Seven models of the Willys-Overland line were advanced in price April 1. The Overland Light Four now sells at \$695 and corresponding Roadster at \$680. The Country Club model is \$795; Willys-Knight Four, \$1,395, and the Six at \$1,425. The Overland light delivery wagon, panel type, is now \$730 and the express type \$705. Overland Big Four and Light Six prices will be advanced May 1. All prices noted are f. o. b. Toledo.

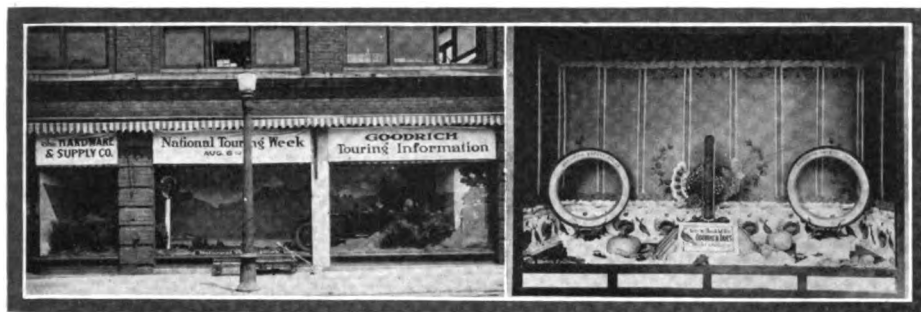
### Fisk Raises Tire Prices.

Fisk Tire and Rubber Co., Chicopee Falls, Mass., has announced a ten per cent advance in its tire prices. This is the first advance since January, but the opinion is general that all the tire companies will make a corresponding increase.

### Briscoe Advances Prices.

Briscoe Motor Corporation has advanced prices 60 per cent on all models. The 4-24 is now \$685; 4-38, \$845, and the 8-38, \$1,045. All prices f. o. b. Jackson, Mich.

## Five Attractive Window Displays

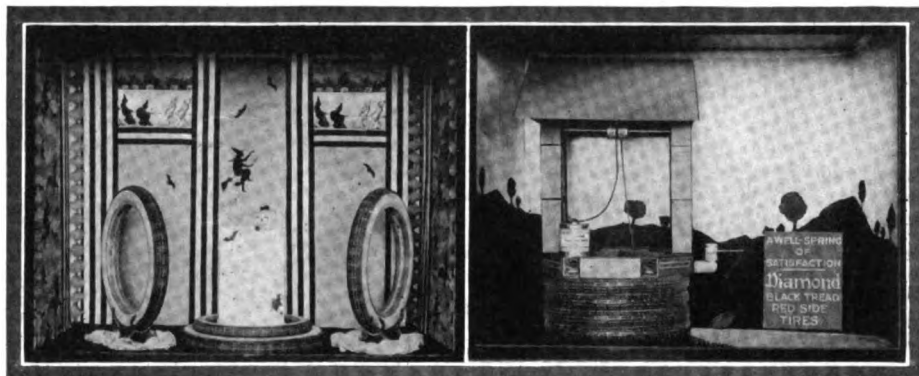


Many manufacturers have on hand and will send on request, photographs of window displays featuring their car or accessory products.

In selling goods the wise dealer in every line connects up his selling plans with that of the manufacturers of advertised brands. It gives speed to the turn-over of the stock and every turn-over means an extra profit.

Here are four window displays used by B. F. Goodrich Rubber Company. The feature to be noted is the timely or seasonal value. One is for Easter week, one for Thanksgiving, and one is for National Touring week. The well and old oaken bucket design can be used at any time.

Dealers are more and more using attractive window displays. Not only are they silent salesmen, but they work with a constant pulling power. If such displays are well lighted they work while the garageman sleeps, bringing in customers the following day.



### Dunn Resigns Overland Post.

H. T. Dunn, vice-president of The Willys-Overland Company, resigned his office at a recent meeting of the board of directors. The resignation is to become effective May 1, 1917.

Mr. Dunn has been associated with the Fisk Rubber Company since its inception; has built, developed and perfected the Fisk organization, and the rapid growth of the business during the past few years makes it necessary for him to again take up the reins and give it his undivided attention.

Mr. Dunn will remain a director of The Willys-Overland Company.

### Staybestos Enlarges Factory.

Staybestos Mfg. Co., Germantown, Pa., has increased its factory space by 50 per cent. The company had contracted its year's output of automobile brake linings and was compelled to enlarge or refuse all new orders.

### Westcott Prices Advanced.

Westcott Motor Car Company, Springfield, Ohio, announces advanced prices on its cars to the following: 4-passenger roadster, \$1,790, equipped with 35x4½ tires instead of 34x4 as at present; 7-passenger touring car and all open type cars, \$1,790. The touring Sedan, now \$2,090, will be \$2,290, and will include 35x4½ tires. The 7-passenger Sedan all closed models are increased to \$2,290. Above prices effective May 1, f. o. b. Springfield.

### Dodge Bros. Will Make Truck.

Dodge Bros., Detroit, Mich., are experimenting with a 1,000-pound truck, using their regular pleasure car chassis. A number of complete trucks have been built and now are being subjected to all kinds of usage. A standard model will be adopted when the tests are completed, although it has not been determined to push sales beyond the present demand.

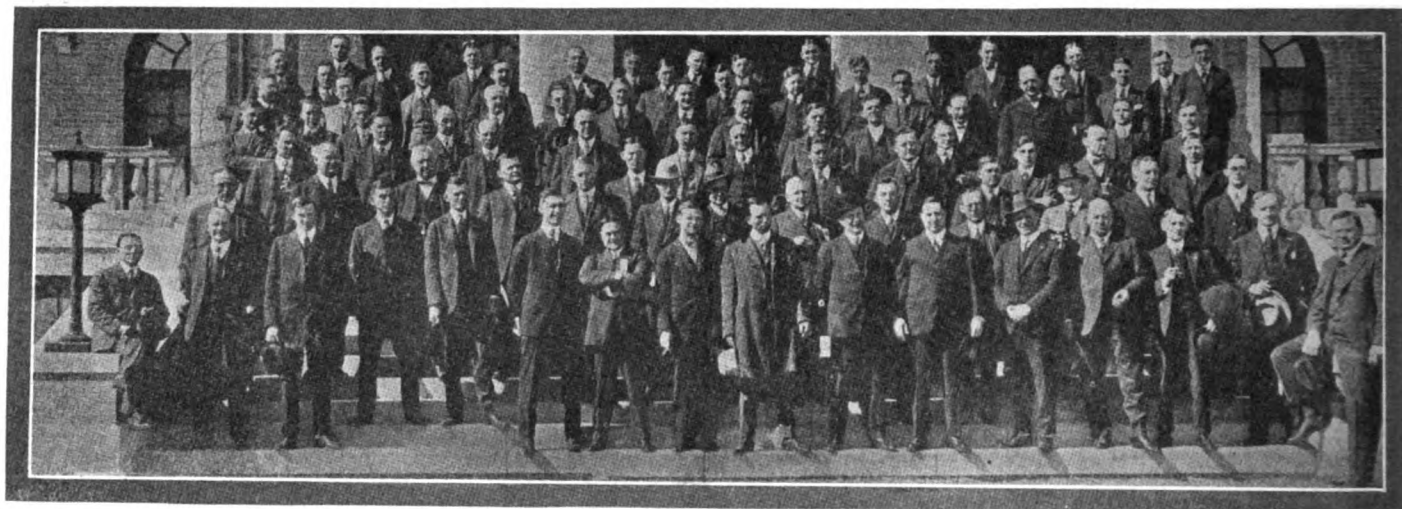
### C. A. Hamilton Dies.

C. A. Hamilton, president of the Chicago Allen Company, died March 12 of pneumonia at his home in Racine, Wisconsin. He was one of the best known mechanical engineers in the country and was an authority on automobile engineering. He was also president of the Racine Manufacturing Company. He is survived by a wife and four children.

### G. R. Cullen Goes to Chalmers.

George R. Cullen, formerly of the advertising department of the Hudson Car Company, has joined the Chalmers Motors Company's advertising force. In so doing he becomes associated again with W. L. Agnew, director of advertising, and his old chief. Mr. Cullen has charge of the writing of "The Chalmers Monogram," which circulates among dealers and contains news and instructions of particular interest to Chalmers distributors.

# Texas Dealers Form Trade Association



The car, accessories and tire dealers of Texas, held a meeting in Dallas, recently, and organized a trade association to act in conjunction with other trade associations in an effort to bring about better business conditions. Two hundred dealers were present, among them the following:

A. C. Burton, Houston; Edwin Grede, Fredericksburg; R. F. Dugan, Abilene; Howe Steele, Houston; B. R. Webb, San Antonio; C. W. Manford, Houston; H. D. Schleeter, Houston; J. M. Davis, Trumbull; G. W. Kelsow, Jacksonville; J. W. Sturgis, Dallas; L. G. Murray, Dallas; F. E. Pryor, Austin; T. J. Christal, Austin; H. H. Cullen, Austin; W. L. Simpson, Gainesville; T. E. Lester, Temple; M. S. Tigert, Houston; B. D. Kent, Houston; W. J. Guewler, Abilene; J. M. McDade, Houston; W. A. Williamson, San Antonio; Ward Delaney, Beaumont; L. E. Couch, Dallas; Ralph Read, Childress; R. G. Kott, Fredericksburg; Bob Sears, White-wright; P. G. Stokes, Big Springs; George Conant, Houston; J. B. Stephenson, Houston; Herbert E. Nindass, Houston; John E. Morris, Taylor; Roy Munger, Dallas; C. L. Zutavern, Dallas; R. L. Cameron, Dallas; W. C. Langley, Dallas; W. C. Cameron, Dallas;

H. E. Hall, Dallas; J. W. Atwood, Dallas; W. F. Rose, Dallas; L. H. Walter, Hillsboro; R. L. Harwell, Ballinger; L. J. Wilson, Coleman; R. O. Walton, Ballinger; Curtis Norman, Paint Rock; M. S. Tuggart, San Antonio; J. R. Cullom, Amarillo; J. P. Short, Dallas; R. G. Marshall, Hillsboro; Charles E. Bancroft, Corpus Christi; C. Chaddick, Corpus Christi; E. S. Huey, Cisco; H. G. Perlstein, Beaumont; H. H. Berryman, Alto; Posey E. Phelan, Lampasas; H. E. Pierce, Denison; R. F. Wulff, Brady; W. F. Britton, Dallas; J. E. Osborne, Paris; Tom Chisum, Amarillo; Sam B. Vaughan, Amarillo; C. L. Timmons, Amarillo; W. G. Bentley, Temple; J. H. Connell, Dallas; W. G. Hyatt, Rotan; R. L. Allison, Farmersville; Louis F. Rick, Dallas; J. T. Stewart, Dallas; J. H. Glass, Houston; J. W. Couch, Snyder; F. E. Weiner, San Antonio.

The officers chosen for the ensuing year were as follows:

President, J. E. Butler, Corsicana; vice-presidents, C. F. Gydeson, Houston, Roy Munger, Dallas, H. H. Bryant, San Antonio; treasurer, W. F. Rose, Dallas; secretary, C. L. Zutavern, Dallas; directors, W. G. Langley, Dallas; H. L. S. Robertson, Houston; F. A. Weinrich, San Antonio; Hub Dibbs, Fort Worth; C. L. Edmiston, Crockett; S. B.

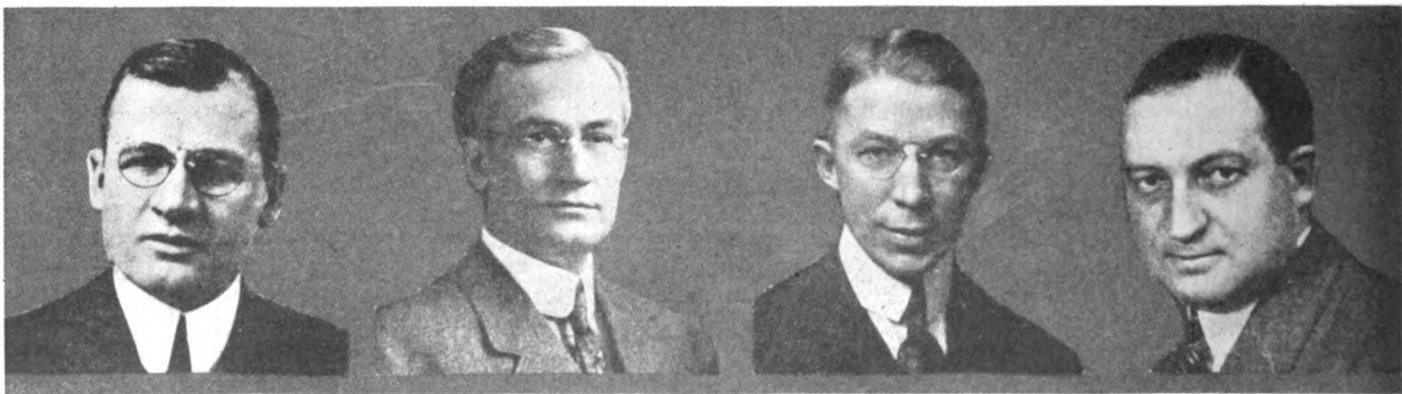
Vaughan, Amarillo; J. M. McFall, Wichita Falls; P. G. Stokes, Big Springs; W. T. Her-rick, Waco; J. E. Osbourne, Paris; H. E. Pierce, Denison; C. E. Bancroft, Corpus Christi.

J. C. Thorpe spoke on national organization work.

It was first thought best to restrict membership to car dealers but an amendment to the original program was adopted extending membership privileges to accessory and tire dealers. Jobbers and manufacturers may become associate members.

The used car problem, price maintenance, simplified accounting, cost finding and other live questions were discussed along lines made familiar and popular with readers of the AMERICAN GARAGE AND AUTO DEALER.

This journal bids the new organization Godspeed in its new and helpful labors. The A. A. G. O. will co-operate with it in making its work productive of practical results.



From left to right: BENJAMIN HELM, manager Down Town Packard Branch, New York City; W. L. AGNEW, new advertising director Chalmers Motor Co.; ROBERT WILEY, JR., of Wiley-Carey Corporation, business manager of the new 6-story co-operative garage in New York City; L. M. BRADLEY, newly named general manager Motor Accessory Manufacturers' Association; J. MURRAY PAGE, newly appointed manager Chicago Branch, Locomobile Co.

Good advertising will help build business for the garage. Advertising to business is like water to a plant. Spend so

much money during the season or year, and keep it up, and if you put any intelligence in your work you will find that the

investment pays. Use the newspapers and one or two other popular forms of reaching the public.

# FORD OWNERS

**Blame the brake and the transmission,  
yet all the rattle and jar are unnecessary**

When Mr. Ford Owner steps on the brake and the car jumps and jerks, he thinks it's something he must put up with in his car. He thinks the jerky, noisy "get away," the lurch when he goes into reverse—are part of the way the Ford naturally acts.

But it isn't so! The trouble isn't with the Ford. Its brake is all right. Its transmission is simple and positive. The whole trouble is in the transmission linings. Ordinary transmission fabric gets hard and glassy smooth from the constant pressure, friction and soaking in oil. When the brake is applied it grips but slips—then grips and slips again. That's what causes the vibration, that ruins the car and makes it rattle.

**\$3  
per set  
of 3**



**\$3  
per set  
of 3**

**TRANSMISSION LININGS FOR FORDS**

**Allow the Ford to start and stop with velvety smoothness**

The brake responds to the slightest pressure. The car makes a smooth, easy, quiet stop. It goes into low and picks up speed with the steadiness and quietness of a high cost car. It eliminates the mechanism-killing vibration.

The difference is entirely due to cork. Cork has the quality of "taking hold." The cork discs in Advance Transmission Linings *grip* at the slightest pressure. They wear very slowly. Never get hard or smooth surfaced. They end the *rattle*. Make a great car greater.

## 40,000 and 50,000 Miles—18 Months in Service

—These are some of the records made by Advance Cork Insert Transmission Linings. The sworn affidavits covering these records are on file in our office. No other transmission lining has ever made any such mileage records. It can't without cork, and we control the patents on the cork idea. No substitute for cork has the gripping or wearing qualities. Get the genuine.

**JOBBER! DEALERS! "Cork Inserts"** are taking hold in great shape. Over 125,000 sets already have been sold. It is being advertised by full pages in Saturday Evening Post—full pages in the motor journals. We supply snappy display signs and dealer helps of different kinds. There's a mighty nice profit on every sale—plus an installation profit. Sold *only* through dealers. Every sale means a profit to some dealer.

**Send the coupon—Dealers  
—don't lose good profits**

Don't wait! The big season is right here! Send the coupon! Get acquainted with these inserts. Then get in your order. Order of your jobber or us. We'll give him credit.

Jobbers! The leaders are all lining up with "Cork Inserts." They're ordering by the thousands of sets. Don't lose out on this live profit maker.

### COUPON

Advance Automobile Accessories Corp.  
Dept. D7-1, 56 E. Randolph St., Chicago.  
Send me a set of Advance Cork Inserts.

Name .....

City .....

State .....

**Advance Automobile Accessories Corp.**

Dept. D7-1, 56 East Randolph Street, Chicago, Ill.





# Welding, Cutting and Brazing

## The Oxy-Acetylene Process.

Ten years ago the oxy-acetylene process was unknown in the United States. Today it is one of the great industries of the country and is extensively employed by metal-working industries on a great variety of work. It has to a considerable extent revolutionized the manufacture of metal products, of steel cutting, and the methods of repairing broken and worn metal parts, of light or heavy sections.

The first oxy-acetylene welding torch that came to the United States was sent from France to Mr. Eugene Bournonville in February, 1904, by his friend and former associate, Edmond Fouché. Mr. Bournonville welded a broken machine part with it and at last accounts, some years thereafter, this part was still in commission. A few years previously, in 1900, Mr. Bournonville had brought to the United States, from France, the method of compressing acetylene by dissolving the gas under pressure in a solvent, which is the method now employed for charging the portable tanks in such general use, and for some time he was the chief engineer of the company first employing this method.

The invention of the oxy-acetylene torch is generally credited to Le Chatelier, 1895, but it remained undeveloped until in 1901 Fouché and Picard produced a torch or blow-pipe employing both acetylene and oxygen under high pressure. There proved to be objections to this type of torch in practical use, and in 1903 Fouché produced the low-pressure or injector type of torch which employed only the oxygen under high pressure. The deficiencies of both types were overcome in the subsequent Gauthier-Ely positive-pressure, or medium-pressure type which used both gases under moderate and independent pressures, affording control of both gases, maintenance of proportions, and effective mixing of the gases.

In 1906 Messrs. Davis and Bournonville met in Paris and investigated the French torches, resulting in their obtaining from Boaz, Rodrigues & Co. the Gauthier-Ely torch with United States and Canadian patents. Both gentlemen were at the time identified with separate acetylene lighting interests, and on their return to the United States the Davis-Bournonville Company was organized, Mr. Davis while on the return trip designing a generator to provide acetylene under pressure. This was the first acetylene pressure generator produced in connection with the oxy-acetylene process.

## Apparatus and Service.

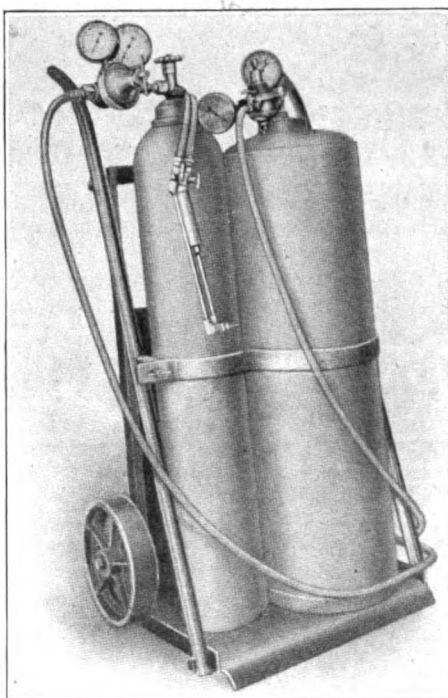
With this process of welding, acetylene and oxygen are used. The gases are provided either in separate portable tanks, under compression, or are generated on the

*Editor's Note.—There is no department of automobile repair work susceptible of greater advancement than in the use of the oxy-acetylene process.*

*Where an apparatus is installed in a busy repair shop it is in constant use. Older methods are discarded in patching broken parts, in cutting operations and in all the operations of brazing and welding. The oxy-acetylene torch replaces them all.*

*This department will be a practical help to repairmen, telling plainly the best methods of using the process. This article is largely historical, and of necessity freely mentions the Davis-Bournonville Company, the first company to introduce the new process in the United States.*

premises and supplied direct from the generating apparatus. The smaller, portable outfits required for field work use the gases in portable tanks supplied by large gas producing companies. The larger in-



An Oxy-Acetylene Outfit.

stallations, for shop use and in manufacturing, usually provide for acetylene generation on the premises, at a lower cost for the gas than that purchased in portable tanks from the producing companies, and, if requirements warrant, individual oxygen generating systems are also installed. With shop and factory thus equipped, the gases are piped through the building and welding stations located where required, with a complete operating unit at each station.

Strong rubber hose, sometimes copper armored, connects the regulating valves to the welding or cutting torch, or blow-pipe, which is the welding or cutting tool. In the torch the two gases are united in the required proportions; the acetylene is the fuel gas, the oxygen being supplied for combustion.

The oxy-acetylene flame has a temperature of approximately 6300 degrees F. When

properly produced, this flame is small, neutral, i. e., neither oxidizing nor carbonizing, and is applied with almost pencil-point concentration. It is in this concentrated application of the properly proportioned high temperature flame that the great value of the process lies. The highest temperature of the best fuel furnaces is about 3000 degrees F., and of the oxy-hydrogen flame something less than 4000 degrees.

Cast iron, steel, aluminum, brass, copper and various alloys are welded, without compression, with a homogeneous union so perfect that when smoothed or machined the union is not discernible. The process is now used successfully for so many operations that to name them would require many pages. It is extensively employed for welding sheet metal in place of riveting, when finish, strength and rigidity are required; for welding pipe lengths, doing away with threaded joints; for tube welding; for uniting parts difficult of forming or of casting, and, in the repair field, its value is almost unlimited in welding and reclaiming broken, worn and defective castings of gray iron, steel, aluminum, brass, bronze, and all metals, either light or heavy sections.

For steel cutting the apparatus and process are similar, the welding flame of oxygen and acetylene being applied as a heating flame which brings the steel to a point of incandescence almost instantly, a jet of pure oxygen then being turned on which cuts or oxidizes the steel in a narrow, smooth-surfaced kerf. Steel from one-eighth-inch up to many inches thick is cut efficiently and quickly. Efficiency in both welding and cutting calls for a separate torch for each operation, rather than for a combination of welding torch with cutting attachment such as was discarded by the Davis-Bournonville Company several years ago.

It should be understood that while the efficient welding and cutting outfit will yield a big value from the time it is first put in use under competent instruction, yet welding is a skilled trade and may not be learned in a day, nor in a week or month, nor in less time than many other trades. It is not, however, a difficult trade to master, and with the right instruction to operators of average ability and resourcefulness, the welding outfit will be profitable from the start, its full value developing from the opportunities afforded the operator to acquire proficiency through experience.

It may be conceded that any good mechanic can, at reasonably low cost, produce a "blow-pipe" through which acetylene and oxygen may be transmitted and united, the gases, when ignited, producing a high tem-

# Bigger Profits

Complete from the Convert-a-Car (Ford truck unit) to the 5-ton Mogul of commerce, the Little Giant line is so valuable that its selling rights are not easy to obtain.

But to the right MEN, we want an opportunity to explain just exactly how well the Little Giant line pays.

If the absolute delivery satisfaction that 11,000 Little Giants have given—some for over nine years—means anything to you; if the 23 years of mechanical and engineering experience behind and builded into the truck mean anything to you; if absolutely definite advertising of *you* in *your* territory means anything to you; if the truck guarantee of the \$12,000,000 world-wide organization behind it means anything to you—

Then ACT NOW! Write for complete particulars of our profitable proposition for dealers, or wire TODAY. All correspondence strictly confidential.

## Chicago Pneumatic Tool Co.

Little Giant Building

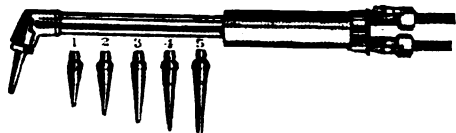
Truck Dept. 2

1615 Michigan Ave., Chicago

*Convert-a-Car—It makes a one-ton truck of the Ford, but leaves it un-mutilated so that it can easily and quickly be RE-CONVERTED into a pleasure car.*



perature flame. That this is so is responsible, in a large degree, for many of the failures attributed to oxy-acetylene "welding." It is not enough, however, to produce a high temperature flame with which metals can be easily melted if "welding" is the desired purpose, for it is most essen-



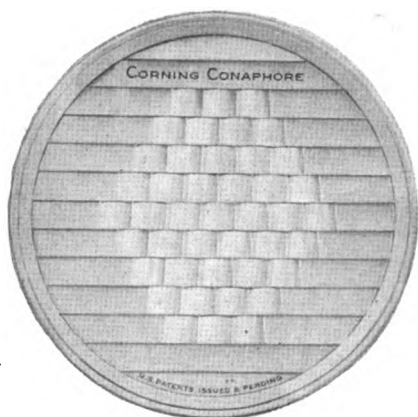
tial that this flame, aside from its concentrated high temperature, must be neutral without any excess of oxygen to oxidize the metal, nor excess of acetylene to carbonize the metal—either result spoiling what might otherwise be a good weld.

### Corning Conaphore.

The Corning Conaphone headlight glass is the only lens made by an established glass works. It is the finished product of the Corning Glass Works, Corning, N. Y. an establishment which had a worldwide reputation before the automobile was known.

About four years ago the Corning management put before its board of engineers the problem of making an automobile headlight which would conform to all existing or prospective laws with regard to glare and at the same time would cast a clear light through fog or dust and would be powerful enough so that the driver could easily read a sign 500 feet away.

It was a large order and one which took the engineering department of the largest makers of technical glass in the world three years to solve. That the problem was solved is shown in the Corning Conaphore, adopted as standard equipment by some of the highest grade automobile manufacturers.



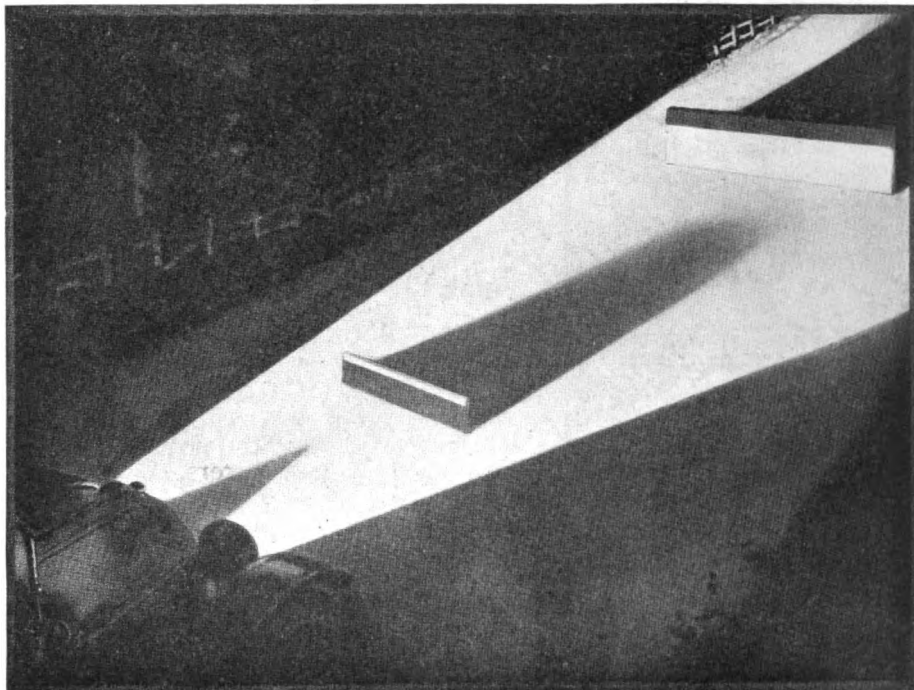
Before the Conaphore was put on the market it was subjected to every possible test. Many were held under the auspices of automobile and civic associations but the strictest of all were the private tests.

Two targets are placed on the road in

front of a car equipped with Corning Conaphores. One target is 22 inches high and 10 feet from the car. The second target is beyond the first one, 30 feet from the

pletely illuminates that part of the second target below the 42-inch line. There is no light anywhere higher than 42 inches.

The Conaphore is made with two kinds



car. The second target is about 4½ feet high and a horizontal line is drawn across it 42 inches above the road.

The intense beam from the Corning Conaphore shoots over the top of the 22-inch target 10 feet from the car, and com-

of glass and in every size of headlight; ranging in size from 3x4½ to 10½x11½ and in price from eighty cents to \$6 per pair. Full particulars may be had by writing Corning Glass Works, Corning, N. Y.

### New Form-a-Truck Distributers.

McKinney-Fuller-Curtis Co. have been appointed distributers for the Smith Form-a-Truck in North Dakota, Eastern Montana, northern half of South Dakota and several counties in Wyoming and Western Minnesota. A new branch has been opened in Fargo, N. D., and will house its Grand Forks branch in a handsome new building. Mr. Curtis, of Dodge Bros., has affiliated with the McKinney-Fuller-Curtis organization.

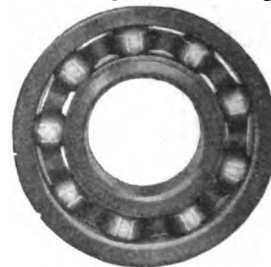
### Chicago Ordinance a Hardship.

Chicago garagemen are required by a police order issued March 26, 1917, to live up to an ordinance passed April 7, 1916. It requires keeping in a book a complete and accurate record of autos and motorcycles entering and leaving the garage, dates of entering and leaving, name of owners and drivers, number of license tag and state issuing same, number of vehicle tag, name of maker and style, color and size of machine. The operation of this ordinance is working a hardship on the garagemen and data should be supplied this office which will assist us in securing a modification of the regulation.

### Pruyn Ball Bearings.

Pruyn Ball Bearing Works, 1919 S. Michigan avenue, Chicago, make a specialty of repairing ball bearings, refitting the worn bearings so they are equal and often superior to new bearings, at a fraction of the cost of new bearings.

The process adopted is to regrind the races to an absolutely true surface, fit in a new set of highest quality alloy steel and a new bronze separator or cage of the



Pruyn one-piece type. The Pruyn Company has on hand at each of its offices a complete reground stock of both single and double row and can make immediate exchange; regrinding and replacing the old bearings if wished. In addition, is carried a complete stock of new ball and roller bearings and steel balls. New Departure Double Row bearings are quoted at seventy per cent off list and a special discount.



# Dealers Can Bank on a Sure, Steady Consistent Income

Any dealer who is a dealer can make a big success with the Dearborn One-Ton Truck Unit. No dealer need look far for all the good, live, practically sure Dearborn prospects he can take care of. Manufacturers, farmers, merchants, expressmen, lumber dealers, contractors, etc., in *your own locality* will buy the Dearborn One-Ton Truck Unit when you show them its remarkable economy and *unquestionable superiority*. Dearborn prospects will not pay \$1500—the ordinary market price for a one-ton truck—the Dearborn Truck Unit (costing \$350) combined with a Ford chassis, makes this unnecessary. The Dearborn gives all the service and is more economical to operate than any \$1500 one-ton truck. It costs less to operate than a team and wagon and does four times the work. There is also a large field for Dearborn sales among big truck fleet owners.

**\$350 and a Ford, New or Old, Make a**

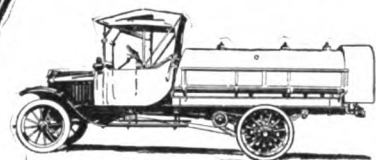
## FORD-DEARBORN One Ton Truck

There isn't a weak point about the Dearborn Truck Unit. It is durable, sturdy, honest—every ounce of it. We guarantee its superiority. The Dearborn Truck Company is an established manufacturing concern—not a stock selling organization.

While the Dearborn Truck Unit is far more staunch and sturdy than others, it is very quickly and easily attached to the Ford chassis. Carries half a ton overload easily; 90% of load carried on sturdy rear axle and heavy truck wheels; full 9 ft. loading space; heavy artillery type wheels with guaranteed hickory spokes and felloes; solid rubber tires; standard tread (same as Ford front wheels); Baldwin roller chains and Baldwin steel sprockets. *All materials used in the Dearborn Unit are of first quality.*

You can make money with the Dearborn. Get the Dearborn Dealers Proposition. Write today

**DEARBORN TRUCK CO.**  
1228 South Campbell Avenue  
Chicago, Ill.





(Continued from page 11.)

own drivers because he feels his responsibility and is less inclined to be careless. He knows, moreover, that if he damages a car he can never get another from me."

Mr. Fitzgerald in further comparing the risks run by a taxi man to that by the old fashioned horse liveryman stated that the customer can overdrive a horse and otherwise abuse it, while if a car is given plenty of gasoline and lubricants, speeding it can do no harm.

#### A Good Location.

The Fitzgerald business has the advantage of a good location. It is near both a railroad and an interurban station. It is connected up by telephone with its own order stations around town and this eliminates dead mileage as well as serves as a convenience to customers and the public. Mr. Fitzgerald installed this system before the Chicago taxi companies installed theirs.

#### Liberal Credits, Small Losses.

Asked regarding the cost and credit method of doing business, Mr. "Fitz" stated that 80 per cent of his business was charge business, yet his loss on bad accounts has been less than 1 per cent. He attributes this to the high-class people who inhabit Oak Park and the further fact that he does not harass a debtor. "I find that they pay me when they do not pay anybody else because they want my service again," he said. "No, I do not watch my credits carefully; almost anybody can get a car from me a few times."

#### Rainy Weather Brings Big Business.

As to busy and slow seasons, Mr. Fitzgerald said his business was good the year around. "My big business is during stormy weather. When it rains, I will take in very often \$6 to \$6.50 an hour with a single car and at such times I often book an order a minute for an hour or more. This calls for quick action and I have devised a book of order blanks in sheets four orders to the sheet, so that orders can be entered without turning the page oftener than necessary.

#### The Help Situation.

Speaking of the help situation, Bro. Fitzgerald said: "That's easy. Treat your men right and they will treat you right. I don't overwork my men. It is safer and better to put on extra men when there is a rush of orders. When I last had a car driven by an overworked man it tipped over; then I cut that all out. It isn't good business, to say nothing of the humanity involved, to make use of tired men in order to save \$1 and lose \$4."

It appears that the Fitzgerald drivers are union men and are paid \$18 for 10½ hours' work. One-third of a driver's time is "dead" time, and he is not allowed to do any other work, as it unfits him for driving, and such other work as might be found for him about a garage would soil his hands and clothes and might delay

his filling promptly a call to drive. "My boys always keep neat and clean so that customers will not feel ashamed to be seen riding with them," said he.

#### Two Buildings Mark Growth.

The illustrations accompanying this sketch show the buildings occupied by Mr. Fitzgerald's business—the old one was built about six years ago and the new one was built one year ago—and a good likeness of Mr. "Fitz" himself is shown. Prior to locating in Oak Park he was an electrical contractor in Chicago. Even tempered, courteous, just, sociable, he has oceans of friends, takes life easy, and yet keeps active and makes plenty of money. He is 40 years of age and good for 40 to 50 more. He has just recently acquired a handsome site in Oak Park for a new residence and will start building operations this spring.

#### A. A. G. O. Members.

Both the Fitzgerald and Davidson concerns are members of the A. A. G. O. and have the association signs prominently displayed. The Davidson place gets all of the repair and other work that would be incidental to the operation of a prosperous and expanding taxi business like Mr. Fitzgerald's.

#### Jointless Piston Ring.

Detroit Piston Ring Company, 747-55 Richmond street, Detroit, Mich., has begun its national campaign early in the year. It proposes to reach every dealer, garageman and repairman, either through jobbers or direct. All will hear of the jointless piston ring.

The basic claim on the ring is that it permits no wastage; that every drop of gasoline is used to make power. It expands uniformly, takes up its own wear and may be expanded to fit a worn cylinder and remain absolutely leak proof, the latter a feature claimed as unique by the manufacturers.



The jointless piston ring retails for a dollar, with a liberal discount to the dealer. In case orders cannot be placed through a jobber, send to the Detroit headquarters or to the Chicago sales office, 20 East Jackson boulevard.

#### Shaler Service Signs.

C. A. Shaler Company, Waupun, Wis., is putting out a heavy steel 14x20 in. flange sign for the use of repairmen using the wrapped thread method of tire repairing.



The sign is lithographed in red, yellow and black and can be attached to any building or post. The flange signs are furnished at cost, 50c each.

#### Bill Automatic Spark Retarder.

Gray-Heath Co., 1440 Michigan avenue, Chicago, is distributor for the Bill Automatic Spark Retarder. The feature of this device is that the spark is automatically retarded to a point of absolute safety by the engagement of the crank and instantly advanced to the running point by the starting of the motor.

Not only are all accidents in cranking obviated but the ignition may be timed by means of the spark lever to whatever point obtains the best result, as the action of engaging the crank retards the spark to a point of safety without any attention on the part of the operator.

The device is simple and easily applied. The retail price is \$3.50 with a good margin for dealers.

#### Permalite Provides Life Storage Battery.

Careful observation and study of the storage battery problems which confront the average motorist, by an Indianapolis company, the Permalite Corporation, have resulted in a plan which provides the automobilist with a new convenience. The battery at best is a very delicate unit, and even when not in use, deteriorates rapidly.

Permalite depots are being established everywhere, to make the distribution nation-wide, and are being enthusiastically received. Only the right kind of dealer is chosen as a representative. The company supplies each service station with a complete battery recharging outfit identical to that of every other Permalite depot established by the company, and these service stations must maintain the same standard of service.

For those who fail to return their batteries to a Permalite station for a recharge within the three-month limit specified, the company has devised a system of reminders, made possible by a record of all holders of the Permalite lease.

# • EVENTUALLY • ALL LEADING DEALERS WILL OPERATE BATTERY SERVICE STATIONS

Are you as a dealer aware of the great development that is now taking place in the battery business? Batteries are rapidly becoming an absolute necessity on every car. The battery business is growing by leaps and bounds.

Detroit Battery dealers are everywhere making big profits.

First because of the battery itself.

The Detroit Battery is a decided improvement on other types.

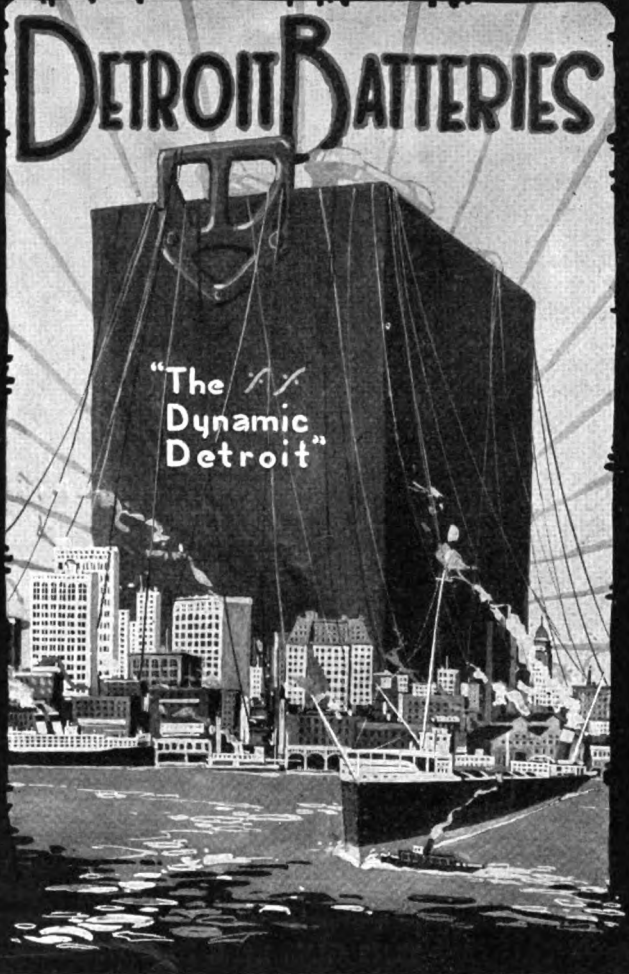
Our careful inspection of every part—every bit of material and of each operation insures absolute purity and high quality throughout.

## *The Greatest Single Improvement*

effected in the Detroit Battery is in the plates. We have succeeded in producing the ideal plate for which all battery makers have been striving — a plate that is hard and at the same time porous. This combination has given Detroit batteries a greater capacity in proportion to weight and size than any other battery ever produced and approximately six months longer life than other batteries.

The Detroit Battery not only gets customers for the dealer, but holds them year after year. It is the foundation of a thoroughly successful business.

And from the service depot standpoint, the de-



sign and construction of the Detroit Battery is especially important.

## *The Unicell Feature*

permits removing and repairing individual cells, without tearing down the whole battery or injuring other parts. This means less repair time and greater profits.

The Detroit Battery Co. offers an unusually

helpful co-operation to its service depots.

## *Advertising*

in the motor publications is making the battery well known among car owners everywhere.

Local campaigns, fence signs, direct mailing cards, folders and so forth are provided.

And we furnish to our own service men a course

of instructions in conducting a battery business. It begins with a practical course on the care and repair of batteries, covers such details as how to secure business, how to advertise, how to talk to customers, service policy and even such details as a bookkeeping and accounting system.

## *Send For Our Portfolio*

We describe our whole proposition in a portfolio which contains samples of the advertising, samples of the course of instructions, a specially dictated proposition explaining the equipment necessary, the cost, and the probable profits.

We want every live dealer to look over this portfolio. It will be interesting, and may lead to a large profitable business.

Write for it now while you think of it.

Fill out the coupon—a lead pencil will do if a pen is not handy. You will learn the possibilities in the battery business and how you can easily get into it.

## **Send This Coupon**

**Detroit Battery Co.**  
108 East High Street  
Detroit, Mich.

**Send me the Portfolio.**

Name \_\_\_\_\_

Address \_\_\_\_\_

**DETROIT BATTERY COMPANY**  
DETROIT, MICHIGAN

# Garage and Auto Dealers' Insurance

THIS department is edited by MATTHEW WHITE, insurance commissioner of the A. A. G. O., who desires a free discussion of all subjects dealing with the insurance problems, fire and casualty, of our readers and members. Application blanks, etc., on request.

## WANTED.

1,000 garage owners, auto dealers and repair shop men to co-operate with each other for the formation of the safest, surest and most economic plan of Fire and Casualty Insurance.

Two Inter-Insurance Exchanges have been formed under the Insurance Laws of Illinois; every detail has been attended to; we have the approval of the Insurance Department of the great State of Illinois, and all we want is your co-operation with those who have already co-operated to vouchsafe to you a participation in the large profits made on your risks.

If you will go at this like you go at selling, housing or repairing an automobile, you will build up an efficacy which will pay you big dividends without investment.

Apply at once to Insurance Commissioner A. A. G. O. for particulars.

## Headquarters for Insurance Information.

The A. A. G. O. offices are headquarters for insurance information of all classes. Garagemen, repairmen and dealers are saving from 10 to 70 per cent on their fire insurance cost through the service supplied here, according to the degree of injustice that has been practiced upon them by the underwriting boards. Just think of it—one A. A. G. O. garageman has saved \$425.

There is accident, employers' liability, workmen's compensation, public liability, property damage—everything in the casualty list—and plate glass insurance besides, which your association can procure for you at a worth-while reduction in the price through co-operative efforts.

We can reduce your hazard and therefore your board rate, then we can save you money in the rate thus fixed. Does it not argue that you should at once take advantage of this work—work that is made possible because you have federated yourself together as members of the garage and auto dealer craft for mutual benefit and protection.

If the reader of this page is a member, these benefits are his for the asking. If he is not a member, he can become one on the payment of \$4 annual dues and obtain the benefits. All of this insurance applies to trade risks. We do not do any insurance for car owners. However, we can recommend good insurance organizations

operating among motorists if your customers want your assistance in this direction.

## Inter-Insurance Is Unlimited.

In 1910, 64 foreign companies received, in premiums.....\$ 84,485,205  
In 1911, 69 foreign companies received, in premiums..... 92,091,254  
In 1912, 74 foreign companies received, in premiums..... 103,320,333  
In 1913, 76 foreign companies received in premiums..... 106,509,444  
In 1914, 80 foreign companies received, in premiums..... 120,951,991  
In 1915, 80 foreign companies received, in premiums..... 127,345,691

We are reminded by these statistics that the insurable property in the United States doubles in value every ten years. There is found to be more fire insurance business offered than the United States companies can take care of, consequently we have a number of foreign companies competing for business and carrying away shiploads of our profits to foreign countries to enhance the already large fortunes of aristocrats who have no respect for our weak, supine inaction.

American garagemen and auto dealers are often at their wits end to get the wherewithal to meet obligations; they have to work, scheme, and worry to keep in the swim, and it is to arouse them from their lethargy that we publish the following figures and ask them what they are going to do about it. The A. A. G. O. Insurance Department is ready and anxious to save you money at once and, while doing so, give you an institution by which you can control your own insurance premiums and rates.

## Where Some of Your Profits Are.

If you carry fire insurance, the following table ought to interest you. It is obtained from authoritative sources and we can well believe the statement of one of the most

forward looking state insurance superintendents when he says, "The truth is that there is no other business of similar magnitude in the United States which enjoys such enormous profits as the fire insurance business."—Hon. Rufus M. Potts, Illinois:

Name of Company.	Capital.	%
Aetna of Hartford.....	\$5,000,000	18
Agricultural of New York.....	500,000	20
Albany of New York.....	250,000	10
Allemania of Pennsylvania....	200,000	15
American of New Jersey.....	1,000,000	29
Austin of Texas.....	250,000	10
Birmingham of Pennsylvania.	200,000	12
Boston of Massachusetts.....	1,000,000	24
Buffalo German of New York..	400,000	24
Camden of New Jersey.....	700,000	12
Commonwealth of Texas.....	250,000	10
Commonwealth of New York..	500,000	10
Concordia of Wisconsin.....	600,000	10
Continental of New York.....	2,000,000	50
Detroit of Michigan.....	500,000	12
Dubuque of Iowa.....	200,000	25
Fire Ass'n of Philadelphia....	750,000	40
Firemen's of New Jersey.....	1,000,000	24
Franklin of Pennsylvania.....	500,000	106
German of Pennsylvania.....	300,000	12
German Alliance of New York.	400,000	15
German American of New York	2,000,000	30
German Am. of Pennsylvania..	200,000	13
Germania of New York.....	1,000,000	20
Girard of Pennsylvania.....	500,000	20
Glens Falls of New York.....	500,000	12
Globe & Rutgers of New York.	400,000	40
Hanover of New York.....	1,000,000	10
Hartford of Connecticut.....	2,000,000	40
Home of New York.....	6,000,000	29
Humboldt of Pennsylvania....	300,000	8
Lumbermen's of Pennsylvania.	250,000	18
Michigan of Detroit, Michigan.	400,000	10
Minneapolis of Minnesota....	200,000	10
National of Connecticut.....	2,000,000	20
Niagara of New York.....	1,000,000	25
Northwestern Natl. of Wis....	1,000,000	15
Orient of Connecticut.....	1,000,000	10
Pennsylvania of Philadelphia..	750,000	30
Pittsburgh of Pennsylvania....	200,000	7
Queen of New York.....	1,000,000	35
Springfield of Massachusetts..	2,500,000	10
St. Paul of Minnesota.....	1,000,000	20
Westchester of New York.....	500,000	40

CUT THIS OUT, FILL IN COMPLETELY AND MAIL IN AT ONCE

## American Garage and Auto Dealers Inter-Insurance Exchange

(Insurance Department A. A. G. O.)  
53 West Jackson Boulevard  
CHICAGO

MATTHEW WHITE,  
Insurance Commissioner.

I am interested in insurance of the following character and wish you would send me full particulars without any obligation on my part whatever:

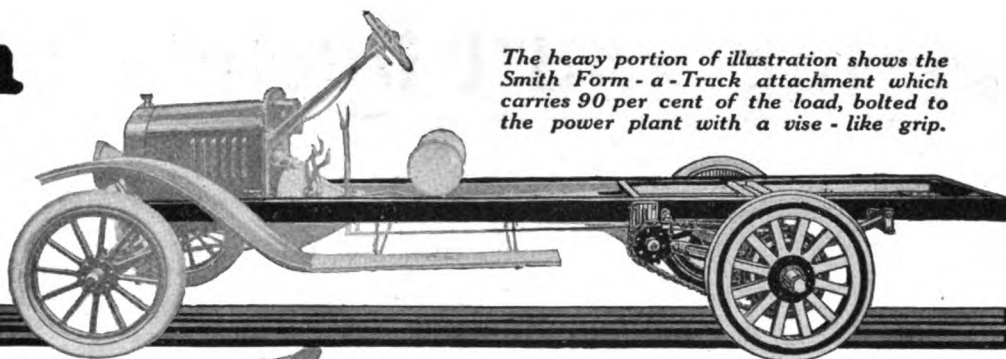
- |   |   |
|---|---|
| <input type="checkbox"/> Fire Insurance on Building | <input type="checkbox"/> Fire Insurance on Contents       |
| <input type="checkbox"/> Workman's Compensation     | <input type="checkbox"/> Employer's Liability             |
| <input type="checkbox"/> Public Liability           | <input type="checkbox"/> Property Damage (inside and out) |

Name..... Address.....

# Smith Form-a-Truck

## \$350

F.O.B. CHICAGO



*The heavy portion of illustration shows the Smith Form-a-Truck attachment which carries 90 per cent of the load, bolted to the power plant with a vise-like grip.*



*New General Executive Offices  
SMITH MOTOR TRUCK CORPORATION  
Michigan Avenue at Sixteenth Street, Chicago, Illinois*

## The Most Valuable Dealer Franchise in the Motor Truck Industry — And We Prove It

The Smith Form-a-Truck dealership is the most valuable sales franchise in the motor truck industry.

It is a guarantee of bigger earnings than are possible with any other make of motor truck or motor truck attachment.

It immediately places the dealer in the position of being the biggest man in his territory in motor delivery or hauling.

The facts are all definite: they are based on business actually in hand.

Shipments of Smith Form-a-Trucks in January of this year were 1,277. In February, 2,075.

March 5th factory production reached a total of 200 a day.

And shipping schedules for the month of March are 5,000 for orders on hand.

Orders on hand for April delivery practically guarantee a shipment of 10,000 Smith Form-a-Trucks in that month.

A total of 18,000 Smith Form-a-Trucks sold and shipped in the first four months of this year is practically guaranteed.

This is 80% greater than the entire production for 1916.

And in 1916 more Smith Form-a-Trucks were sold than all other makes of attachments combined, or any other one make of motor truck.

Orders are coming from every part of the country—every line of business. Our entire planned production for 1917 was 20,000—practically reached the first four months.

But shipments will continue to be made promptly, even on this tremendously enlarged production.

We have the material—the money—the manufacturing facilities. We can take care of any demand, regardless of size, that we have scheduled sixty days in advance.

Big sales and positive guarantee of deliveries are what make the Smith Form-a-Truck dealer franchise the biggest asset in the motor truck industry. If the territory you are in is not already closed, apply now—by wire.

### SMITH MOTOR TRUCK CORPORATION

Manufacturers of Smith Form-a-Trucks

Executive Offices and Salesroom, Suite 984 Smith Form-a-Truck Building, Chicago

Eastern Branch, 1834 Broadway, New York

Kansas City Branch, 1808 Grand Avenue

Southern Branch, 120 Mariette Street, Atlanta

Pacific Coast Branch, Pico and Hill Streets, Los Angeles, Cal.

Omaha Branch, 2212 Harney Street



# Starting and Lighting Systems

Electric Equipment that Every Auto Repairman Should Understand—Its History and Development—Vital Facts for Garageman to Consider If He Keep Abreast

By A. O. WITTE,  
Chief Engineer, American Bureau of Engineering

(Continued from our March number.)

**T**HE motorist whose car is in trouble usually does not know why his starter will not work, why his lights will not burn when he needs them. Electricity is a mystery to him and, when electrical troubles appear, he wants them eliminated. He does not care who puts his car in shape, if he can only be sure of getting service.

As things stand today, the car owner will probably take his automobile to a service station conducted by the maker of his car if such a station is conveniently located. Here his car is inspected, and if trouble is found in the battery he must drive to the nearest battery service station. If trouble is finally traced to a regulator which has a factory seal, the regulator must be sent to the factory for repairs, and the car must either be kept in the shop until the apparatus is returned or a new part obtained. With several manufacturers working on the electric equipment on a car, there is a tendency for the service men to put the blame for trouble on the other fellow, with the result that the motorist does not get the best use from his car. All this would be changed if the garage service was efficient and capable of doing all of the work necessary, as should always be the case.

## Loss of Time an Element.

With many men to be consulted in order to have repairs made, much time is lost and the repair bill is high. Quite often a repairman traces the trouble to some sealed part of the equipment and is then compelled to stop. The temptation to break the seal is strong, and frequently the car owner insists upon having his automobile put in shape to use immediately. As a result, he gives his permission to the repairman to break the factory seal and complete the repairs. In doing this the car owner takes a chance, of course, as the repairman may not be familiar with the internal construction of the sealed part, and therefore may not be able to make repairs satisfactorily.

Looking at the question of repairs from the garageman's viewpoint, the establishing of service stations means loss of possible business. The repairman's lack of knowledge which is sufficiently thorough to enable him to make repairs satisfactorily is due to a number of conditions. The growth of the industry has been so rapid, and the number of models of starters and generators is so great, that it has been practically impossible for him to master the details of construction of the various equipments. There are about twenty-five distinct starting and lighting manufacturing companies doing business today who have made almost one hundred types of electric systems.

Each manufacturer has his own designs and constructions. Delco has made more than ten. Westinghouse has eleven lighting systems and eight types of starting equipment. Remy has made nine distinct systems, and so on. Each system has its individual characteristics and details of construction. Only one of the large manufacturers furnishes internal wiring diagrams.

## What the Auto Repairer Must Do.

To improve his condition, and put himself in a position to be able to handle all electrical repair jobs thoroughly and quickly, several things are necessary for the garageman. He must first resolve to master the details of all of the starting and lighting systems which are in use today, and he must obtain complete data of the construction, both external and internal. He must have wiring diagrams of all cars on the market, and he must combine such data in a uniform system of instruction so that he may proceed to test and repair all electrical apparatus quickly and systematically.

The other systems are being installed constantly, but the manufacturers do not furnish the repairman with complete instructions for fear that he will not be able to make the repairs according to the directions and will therefore be unable to give reliable service.

## Manufacturers' Data Incomplete.

The garageman should, of course, try to make a thorough study of the various electrical systems, but is greatly hindered in doing so by the difficulty he has in obtaining complete data from the manufacturer. Even if the latter were willing to give out instructions, the garagemen would have to spend much time and money in carrying on the necessary correspondence. The data he would obtain in this way would be made up according to the ideas of the makers, and there would be no uniform instructions to be followed.

Each starting and lighting system presents its own problems and each manufacturer treats them in his own way. Moreover, in some cases, the battery would not be included in such instructions, nor would the lamps. The great number of problems which present themselves to the garageman, and which he should be able to solve quickly in order to give the best service, may be illustrated by the following typical questions:

## QUESTIONS ASKED OF MEN APPLYING FOR POSITIONS AT A LARGE SERVICE STATION.

1. The Westinghouse equipped "Case," with a total of 42 candlepower for all lights, has a normal charge rate of about 10 amperes. If you found that the Westinghouse equipped "Imperial," with a total of 50 candlepower, had only 5 amperes output, what should be done, and how would you do it?

2. The "Grant 4" and the "Grant 6" both use Allis-Chalmers equipment. The battery cables lead direct to the motor-dynamo in each case and one side of the light and charging circuit is grounded through a motor-dynamo terminal. If an accidental ground occurred on a "Grant," would you trace from the positive or negative side of the battery to find the trouble?

3. The Bijur equipped "Knox Tractor" uses four lamps, one 7-volt 24-candlepower and three 7-volt 2-candlepower, 30 candlepower in all. The Bijur equipped "Scripps-Booth" uses six lamps, two 14-volt 15-candlepower, two 14-volt, 4-candlepower and two 14-volt 2-candlepower, 42 candlepower in all, and 12 candlepower greater load than on the "Knox." The normal output of the "Knox" dynamo is 8 amperes. What should be done with a "Scripps-Booth" dynamo that showed only 6 amperes output?

4. Most Delco motor-dynamos have one armature with two commutators, two brushes on each commutator. Are the commutators connected electrically when the brushes are lifted?

5. All "Lozier" cars with Gray & Davis equipment have the same type of regulation, an adjustable slipping clutch governor. If one 1914 "Lozier" showed a 10-ampere output and you knew that everything was in good working order, would you increase or decrease the governor spring tension on another "Lozier" of the same model whose dynamo showed a 6-ampere output?

6. How many amperes draw would you allow for a Connecticut battery ignition system? How many for an Atwater-Kent?

7. Do Delco systems ground positive or negative with the one-wire type?

8. The Wagner dynamos ("Studebaker" and "Moline") and the Leece-Neville dynamos ("Haynes") both have third brush regulation. To raise the output, should the adjustable brush be moved with or against the rotation of the armature in the Wagner outfit, and with or against in the Leece-Neville?

9. Does it make any difference how you connect the positive and negative battery posts to a North East dynamo?

10. Where should an ammeter be placed on a 1914 "Cole" or "Buick 55" to show charge and discharge? These cars have Delco equipment of the same type.

11. Remy 1914 dynamos use a 20-ampere field fuse, in 1915 they are using 10-ampere fuses. Bijur uses a 6-ampere fuse. What size field fuse should be used on Rushmore dynamos and what size on North East?

12. Would you use a larger or a smaller gauge of wire on the ballast coil of a Rushmore system to increase the output?

13. The Westinghouse motor-dynamo on Ford and Hupmobile does not carry the cutout on the motor-dynamo, on the dash, under the seat, on the cowl or in the tool box. Where would you look for it on the Ford? Where on the Hupmobile?

14. Can a 1912 Cadillac be in good order if a test shows that with the engine running above twenty miles per hour, the dynamo is not charging the battery at all?

15. Thirteen wires enter and leave a single conduit on the 1915 "Maxwell." 1 wire at one point, 2 at another, 3 at a third, 4 at another, 7 at another and 9 at the last point. Nine wires are in the charging circuit, 8 in the starting circuit, 4 in the lighting system, 3 for ignition and 2 for the horn. If seven or eight of these wires were disconnected and had not been marked, what would you do?

Such problems indicated by these questions are examples of what the electrical repairman must be able to solve quickly if he is to give satisfactory service.

## The Constituent Parts of a System.

Every starting and lighting system consists of three principal parts, i. e., the battery, the starting motor, and the generator. They are interconnected by cables, wires and switches. It would seem that such a system, especially when the units of which it is composed are quite small, ought to be quite simple and easily understood. When such units are used in electrical power plants, they are often of a huge size. In Chicago, where the writer is located, we have many generators of 15,000 horsepower each. One has a capacity of 40,000 horsepower. Yet such large machines do not



## Protect Your Car Investment

LET'S assume that your car cost \$1,000—6% interest on that investment is \$60 annually. The annual interest on your investment is about seven times the cost of a year's supply of

# Polarine

FRICTION REDUCING MOTOR OIL

The lubricant which minimizes friction, prevents scored cylinders and burned out bearings.

By using Polarine, you will save in repairs alone, a great portion of the interest not to mention the increased re-sale value and the pleasure of a smooth-running motor.

Polarine flows freely at zero.  
It maintains the correct lubri-

cating body at any motor speed  
or temperature.

Polarine is produced scientifically by acknowledged authorities, who have made a life study of lubrication. They are unable to improve it. The Standard Oil Company recommends its use for any make or style of car.

Order a half barrel today, and protect your car investment.

Standard Oil Company (Indiana) Chicago, U. S. A.

Use Red Crown Gasoline and get more power, more speed, more miles per gallon

17a

present more puzzling repair problems than the generator rated at a fraction of a horsepower which is used on motor cars.

In stationary work the number of methods of regulating current output or voltage are less than a half-dozen. In automobile generators, some fifteen methods have been devised and used.

How is the average garageman to become thoroughly familiar with all the special features of design which the equipment makers have originated? His position in this respect may be compared to that of a boy who is running after a fast moving automobile trying to get a hitch. The chances of his catching up are small. The equipment maker is driving the car, carrying his service station men with him, leaving the garageman to keep up as best he can.

#### How to Improve Conditions.

To improve his condition, and put himself in a position to be able to handle all electrical repair jobs thoroughly and quickly, several things are necessary for the garageman. He must first resolve to master the details of all the starting and lighting systems which are in use today, and he must obtain complete data of the construction, both external and internal. He must have wiring diagrams of all cars on the market, and he must combine such data in a uniform system of instructions so that he may proceed to test and repair all electrical apparatus quickly and systematically.

The methods of testing are especially difficult to devise. To make these tests satisfactorily, the repairman must know what the proper equipment of lamps should be on all cars on the market, what the charging rate should be on each car and at what speed it is obtained. He must have testing instruments. Each car should be tested in the same way and hence the method of testing used must be comprehensive enough to include the detection of all starting and lighting troubles. It may be maintained that each case of trouble has its own symptoms and the method employed to take care of it should be changed to fit the symptoms. The trouble is that the same symptoms may be interpreted differently by repairmen, just as two doctors may arrive at different conclusions, starting with the same symptoms.

#### Locating the Trouble.

With no definite method of procedure, much time is lost in deciding what is wrong, and what must be done to remove the trouble. The idea used by many repairmen that "If I look long enough I'll find it" is a poor one, and leads to dissatisfied customers, who will come to such men only once, and then go to a garage where the repair work has been systematized, and where the hit or miss method has been outgrown.

In testing a starting motor and its circuits, the work is comparatively simple, for the trouble makes itself known by the failure or unsatisfactory action of the motor. The circuit should be tested, starting at the battery, going from there to the starting switch, the starting cables, and finally the motor. The tests which can be made on the battery are reading the gravity, measuring the voltage both with the starting switch open and closed, examining the height of the electrolyte, and making sure that there are no loose, dirty or corroded terminals or connections. The switch may be examined for dirt, loose, burned or dirty contacts or unsatisfactory action of the moving parts. The cables may be examined for short circuits, grounds or loose connections.

The starting motor presents greater difficulties. The repairman may, of course, examine the brushes and commutator and look for loose wires, but when it comes to test-

ing for short circuits, or open circuits between commutator bars, in the armature coils, or field windings the task is a little more difficult. Moreover, some starting motors use auxiliary devices such as magnetic gear shifts which may cause trouble.

Testing the charging circuit presents greater difficulties because of the more complicated construction of the generator. All generator trouble will affect its output. The repairman must be able to interpret the readings on an ammeter which he may insert in the charging circuit.

#### A Good Method.

A good method is to connect an ammeter reading up to about twenty-five amperes and having the zero at the center of the scale so as to be able to read both charge and discharge. The first thing to do is to determine whether there is any discharge from the battery with all lights turned off, and the engine not running. This will show the presence of any trouble in cut-out, lighting switch, wiring between the battery and the switches, or, in fact, any apparatus permanently connected to the battery. Next,

### The Reason for System in Repair Work.

This is the idea used by many repairmen in locating trouble: "If I look long enough, I'll find it." The idea is a poor one. It leads to dissatisfied customers. They will come to such men only once, and then go to a garage where the repair work has been systematized, and where the hit or miss method has been outgrown.

the lamp current should be measured, and if it is too much or too little, corresponding investigation made. Then the lamps should be turned off and the engine started.

To make it possible to start the engine with the motor and without disconnecting the ammeter, a switch should be connected in with the ammeter so that the meter may be short-circuited, and thus protected from the heavy starting current. If the proper charging current is not obtained, we may have one of the following conditions present, i. e., too much charging current, not enough, not any, or the battery may be discharging instead of being charged. Each condition will call for special investigations, and all charging circuit trouble will cause one of these conditions.

#### A Book of Instruction.

To give complete directions for making such tests requires books of instructions for each make of starting and lighting equipment now in use. Gathering the necessary information is too big a task for the average garageman. It is possible, of course, to send men to the various factories and have them receive thorough instructions. All manufacturers will not, however, take the trouble of teaching garagemen, as it would be a matter of great expense to them, and the furnishing of the necessary data and diagrams would require too much work. Such instructions should be gathered and distributed by some organization whose entire time should be devoted to the work, thereby eliminating the trouble, time and expense

which prevent garagemen, all acting independently, to do the work.

Such an organization needs, of course, the co-operation of the people for whose benefit it is created. Car manufacturers and equipment makers should furnish the necessary data and diagrams for their products, which are necessary for the construction of a uniform system of instructions which has the endorsement of the manufacturers and by means of which the garageman may make repairs on all parts of all starting and lighting systems, and do it in a manner that will cause the equipments to give reliable and continuous service.

The writer has devoted considerable thought to this work, and much work has been done toward the perfecting such an organization in the past two years. Lack of space prevents a complete description, but the writer will gladly answer letters of inquiry from any garageman who may be interested.

### Shuman Gets R. T. Gray.

The Shuman Advertising Company of Chicago has recently secured the services of Russell T. Gray, formerly advertising manager of The Haynes Automobile Company, Kokomo, Ind. Mr. Gray is an automobile engineer, a graduate of the Engineering Department of Purdue University and has had extensive experience in various phases of engineering work as well as in advertising. He is, therefore, well fitted to handle advertising and sales problems of a technical nature, and particularly those of the automobile and accessory field.

The Shuman Advertising Company was established four years ago as a technical advertising agency. Its steady growth has demonstrated the fact that there was need for a more intelligent service on the merchandising of things mechanical than had existed heretofore. R. R. Shuman, the president and founder of the company, one time western editor of the *Iron Age*, has become nationally known as an authority on trade journal advertising—the most difficult of all advertising to write right; and he goes on record as saying that any man who can succeed in that field will find the writing and designing of general newspaper and magazine advertising a pleasant pastime.

### Buys Electric Clock Business.

Waverly Novelty Co., Pittsburgh, Penn., has bought the electric clock business of the Stewart-Warner Speedometer Co. E. M. Thompson, inventor of the clock, will have charge of the clock manufacturing work for the Waverly Company.

### Fay Takes Boston Maxwell Agency

Charles E. Fay has resigned from the managership of the Ford branch in Boston and bought the Maxwell retail agency. Mr. Fay's agency will include Rhode Island and Eastern Massachusetts.

The editors of this journal want samples of advertising matter and form letters that pulled business. Send them in and help along our business-building campaign.

## THIS SIGN OVER THE DOOR OF A GARAGE

indicates to the motorist a standardized storage battery exchange service. Permalite Exchange Depots extend from coast to coast. Wherever you see a Permalite Exchange sign, you know that you can drive up to that garage and exchange your old Permalite Battery for a new one—and

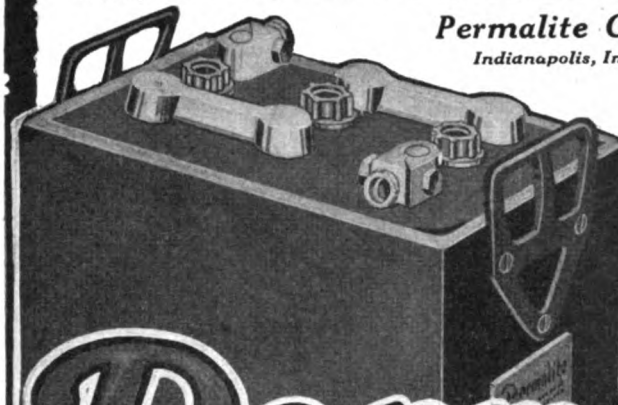
### The Exchange Fee is Only \$1.25

You have paid your last repair bill and bought your last storage battery when you become the owner of a Permalite Lease.

**Permalite Corporation**

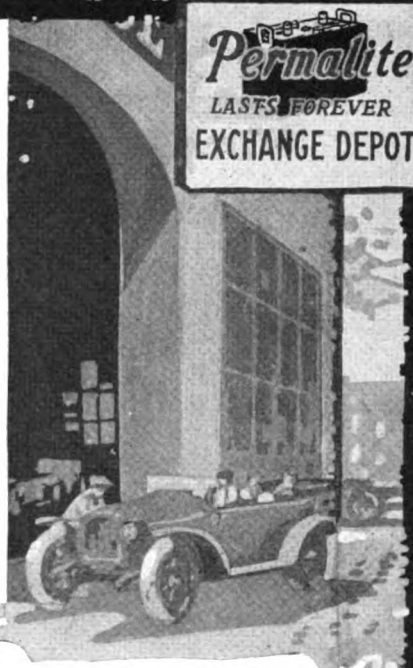
Indianapolis, Indiana, U. S. A.

We want a live dealer in every town in America. Get in touch with us at once: address Department -5 for our Dealers' Proposition. If you can measure up to Permalite Standard of Service, we will be glad to have you represent us in your territory.



# Permalite

**Permalite**  
LASTS FOREVER  
EXCHANGE DEPOT



Mr.  
No-Worry  
Springs

## Let Me Help You Build a Bigger, Better Spring Business

Listen! When a man drives in with a broken spring, what do you do? Do you just repair the break? Or do you put in a new spring?

You know that three out of four breaks occur in the center. It's the hole or nib in the center that weakens the spring and causes the break.

Don't just repair that spring. It is likely to break again. And who gets the blame? You do—the owner feels it's *your* fault. Sell him a new spring—a

## TUTHILL LUBRICATED TITANIC SPRING

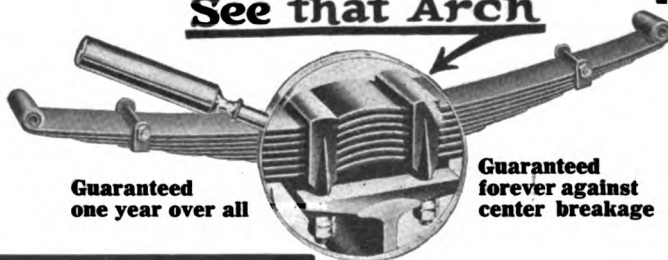
the spring with *the patented arch*—no weakening center bolt—no center nib—the spring that ends center breakage — the spring whose trouble-free reputation is so great that it's sold for more replacements than all other makes put together.

Sell him a Tuthill Titanic — you make a good profit on the sale and installation — and you make a satisfied customer — a customer that will *boost* for you.

There's a Tuthill distributor near you. Let us send his name — also our 1917 price list — the most complete list of springs ever published.

**TUTHILL SPRING COMPANY**  
760 Polk Street, Chicago, Ill.

**See that Arch**



Guaranteed  
one year over all

Guaranteed  
forever against  
center breakage



# Three Factors in Auto Sales

## Car Owner Now as Important as Manufacturer and Dealer

By L. E. WILSON,  
V.-P., Briscoe Motor Corporation.

THE automobile business started off as a manufacturer's proposition solely, with the dealer taking whatever the manufacturer produced.

Then, as the dealer acquired a more complete knowledge of the type of car he was best able to sell, the business took on a dual character, with manufacturer and dealer collaborating in the production of each season's model.

Gradually, a third member has worked his way into the combination—the owner. He has become more and more insistent on a recognition of his viewpoint and his desires, until now he overshadows both the others.

The successful company today is the one in which this partnership relation of manufacturer, dealer and owner is emphasized to the utmost.

Each of the three has a definite duty to perform—an obligation which he owes to both of the others.

The manufacturer must provide the dealer with the proper product, backed up in the proper way. That means a product not only able to meet competition on an equal basis, but one so good that its service in the hands of owners will create a name value which will be a lasting sales asset to the dealer. The manufacturer, too,

must provide an adequate supply of cars, so that the dealer may at all times be assured of being able to fill the orders he has taken and the subordinate contracts he has made. None of the sales effort of the dealer should be lost on account of inability to deliver the goods.

The dealer's obligation in the partnership involves loyalty to the car, loyalty to the company and a belief in the leadership and permanence of both. The first man whom the dealer sells on his car should be himself—if he has not done so he is doing an injustice to the other partners. The dealer's ability to do business depends on the manufacturer's ability to turn out good cars. And the manufacturer, in turn, is largely dependent on the sales ability of the dealer for the public esteem in which his cars are held.

The owner owes to both manufacturer and dealer the exercise of reasonable care in the use of his car, including proper attention to cleaning, lubrication, cooling, and every detail of driving. He owes to manufacturer and dealer a realization of the fact that he is driving a fairly complicated piece of mechanism, and that no mechanism can withstand continual usage without periodical attention, any more than flesh and blood can.

## "Almost Beyond Repair"

The accompanying illustration is a gruesome exhibit of the effect of a nitro-glycerine explosion.



The photograph was sent to AMERICAN GARAGE AND AUTO DEALER by a subscriber and with the following letter:

"Am enclosing a postal which I picked up down home last week. It is almost self-

explanatory. A man was carrying a lot of nitro-glycerine and it exploded. What happened to him depends on his former

life. All they found of him was about one square inch of his lung. As you see, the car was wrecked 'almost beyond repair.'"

Moral: Put shock absorbers on your car.

## Statement of the Ownership, Management, Circulation, Etc., Required by the Act of Congress of August 24, 1912,

of The American Garage and Auto Dealer, published monthly at Chicago, Ill., for April 1, 1917.

State of Illinois, County of Cook, ss.—Before me, a notary public in and for the state and county aforesaid, personally appeared J. R. Hastie, who, having been duly sworn according to law, deposes and says that he is the president of The American Garage and Auto Dealer, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher—American Garage and Auto Dealer, Inc., 53 W. Jackson Blvd., Chicago, Ill.

Editor—C. M. Carr, 53 W. Jackson Blvd., Chicago, Ill.

Managing Editor—C. M. Carr, 53 W. Jackson Blvd., Chicago, Ill.

Business Manager—J. C. Kelsey, 53 W. Jackson Blvd., Chicago, Ill.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock): J. R. Hastie, 53 Jackson Blvd., Chicago; H. D. Fargo, 53 Jackson Blvd., Chicago; H. B. McMeal, 53 Jackson Blvd., Chicago; J. C. Kelsey, 53 Jackson Blvd., Chicago; C. M. Carr, 53 Jackson Blvd., Chicago; S. R. Edwards, 53 Jackson Blvd., Chicago; I. B. Lipson, Fort Dearborn Bldg., Chicago; F. X. Mudd, Fisher Bldg., Chicago; W. C. Clineen, 1119 Hinman Ave., Evanston, Ill.

3. That the known bondholders, mortgages and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: (If there are none, so state.)—None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is: (This information is required from daily publications only.)

J. R. HASTIE,  
President.

Sworn to and subscribed before me this 23rd day of March, 1917.

(Seal.)

E. V. CROSS,  
(My commission expires Oct. 24, 1920.)

## Packard Trucks Advanced.

Packard Motor Car Co. has raised prices on all its trucks. The prices are advanced in proportion to the advance in raw materials, which in some cases have risen over 125 per cent since the old prices were in effect. The new prices on truck chassis are: 1-ton, \$2,325; 1½-ton, \$2,600; 2-ton, \$3,000; 3-ton, \$3,600; 4-ton, \$4,025; 5-ton, \$4,550; 6-ton, \$4,800. The advances range from \$100 to \$250. Prices are f. o. b. Detroit.

## Fisk Tire Prices Increased.

Fisk Rubber Co. announce a general increase of ten per cent in its tires.

# LOOK AT THESE PRICES

and consider that all **Hanard Products** are *absolutely guaranteed* and sold with the understanding: *Your money back* if not entirely satisfied. Our confidence in **Hanard Quality** is unlimited, and yours *will be* after the first test.

## Absolutely Guaranteed for One Year

### HANARD SHOCK ABSORBERS SINGLE ARM TYPE

**\$4.50**

Per set of 4

Oilers and Bronze Bushings  
50 cts. per set extra

### HANARD SPRING BUMPER

Clamps on

2 inch Steel Channel Bar

Black Enamel...\$3.50

Nickel Plated....\$4.50

*If your dealer cannot supply you with  
Hanard Products, order direct from us.*

### HANARD SHOCK ABSORBERS DOUBLE ARM TYPE

**\$5.50**

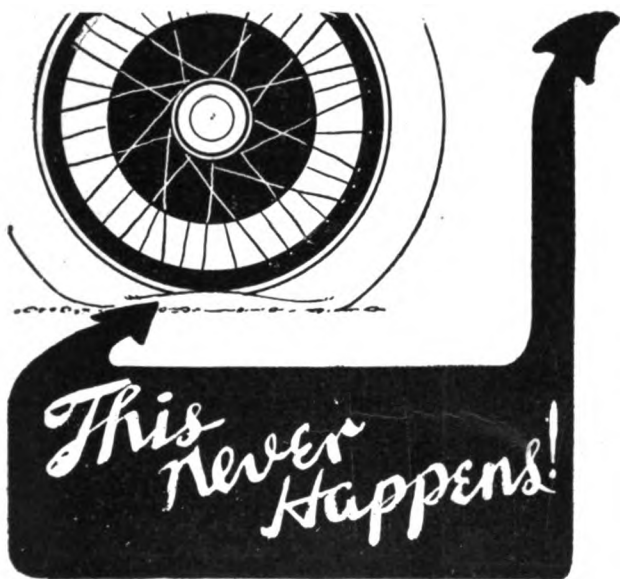
Per set of 4

Oilers and Bronze Bushings  
50 cts per set extra

## HANARD SALES CO.

86 Michigan St.

Milwaukee, Wis.



## To a Tire That is Filled with National Rubber Tirefiller

### Because:—

These rubber sections laid end on end in the shoe take the place of an air-filled rubber tube—a perfect substitute with several times more efficiency, firm, resilient, never blows out, no punctures and longer lasting tire.

### Dealers:—

Motorists are beginning to realize the value of National Rubber Tirefiller and are using it with surprising results. Write for our agency plan.

## NATIONAL RUBBER FILLER CO.

MIDLOTHIAN, TEXAS



# Used Cars Merchandizing

## Converting a Business Bug-a-boo Into a High-Class Profit Producer — Standardization a Big Feature—The Big End of the Business

**T**HE second-hand or used car business has not been profitable with many dealers and garagemen and has been discontinued by them. The temptation to take in old cars as an aid to making sales for new cars has been yielded to, resulted in loss and finally thrown out as the bad end of the automobile business. Thus the

guess. Dealers were bidding against each other, the result being cars were taken in beyond their real value as a merchandise commodity. The fault was not alone with the buying of these cars but also with the selling. No attempt at standardization was made. The cars that were taken in were more or less junk and were a little better

basis of a standard set by the concern, then sell them on the reputation of the house as dependable merchandise. Like the physician, the druggist, the grocer and other dependable institutions in a town or neighborhood, the garageman and auto dealer should be able to stand behind his services and goods and build up a business on confidence.

We find that this idea has been most admirably put into effect by the Louis Geyler Co., Chicago auto dealers at 2500 Michigan avenue, and 2457 Indiana avenue. The first named location is the home of the Hudson in this city and is one of the most artistic salesrooms in Chicago. The Indiana avenue location is that of the used car salesroom and repair plant. In this article appears a likeness of the building, also an interior showing what probably is the handsomest used car salesroom in America.

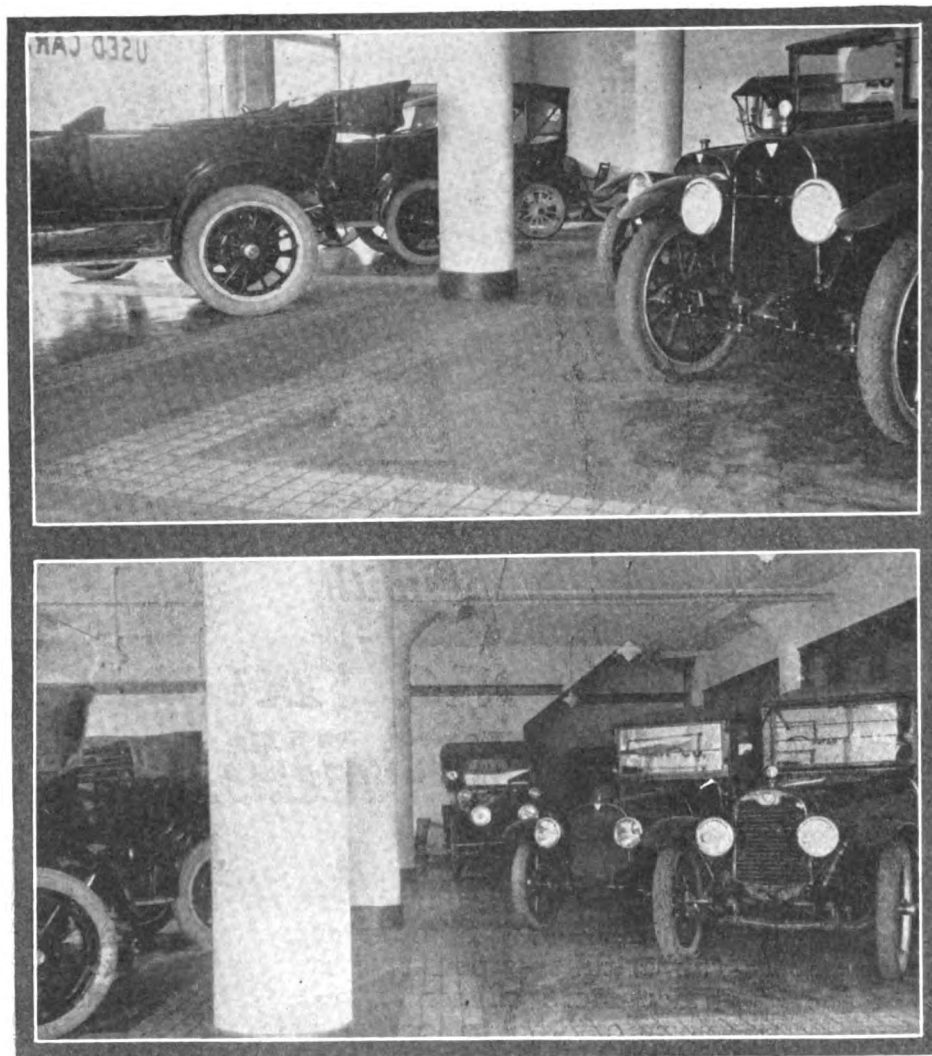
The Geyler policy is to take in all makes of standard cars as part payment for new Hudson cars. These old cars are run through the shop and are made mechanically right, repainted, new covers, tops and tires added, and then placed on the floor in the salesroom. The price which the Geyler firm pays for these cars is not always identical with the price quoted in the Used Car List issued by the Chicago Auto Trade Association, but it approximates the same, varying in accordance with their own expert judgment as to what they can afford to pay for a car, rebuild it, and bring it up to the Geyler standard, and what they can obtain for it on the used car market. As Mr. Geyler is a conservative business man, he never pays too much—in other words, he is a "bear" when he buys an old car.

### Handsome Building as Used Car Mart.

The building used by the Geyler company as a used car mart is a handsome one as the illustration shows. It was completed early in the present year and is attracting a great deal of public notice. It is one of the institutions throughout the country that is putting the used car business on the map.

While what the Geyler Co. is doing in Chicago is comparatively new and expresses a merchandise idea the writer has had in mind for some time, it has been learned that other institutions both East and West have been and are working along similar lines. The Paige Automobile Agency of this city and a number of dealers in the East are doing a nice used car business and sell cars on a 10-days' trial refund basis. One concern has tried out the plan and finds that only one per cent of the money paid in on such sales has been refunded.

One of the salesmen on the Geyler floor was asked regarding the probable extent of the used car business. He stated that they expect to sell 600 cars this year and increase the output year after year, because the one defect in the used car selling scheme has been overcome, namely, lack of confidence of the buyer in the merchandise.



Interior of Louis Geyler Co. Used Car Salesroom.

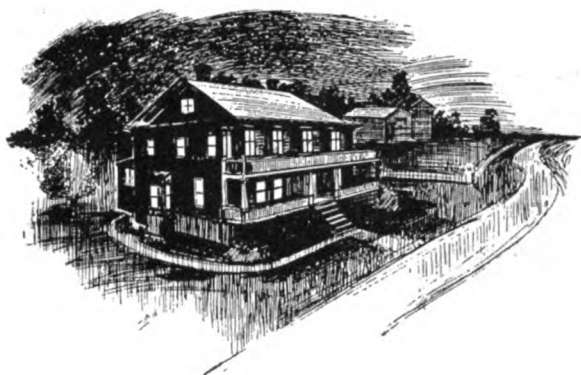
used car business has received a black eye in the minds of thousands of dealers and garagemen, all because sound business methods have not been introduced into a branch of the trade that can be made an aid rather than a handicap to the general business.

Taking in old cars and re-selling them in the old way was not real merchandising. It was "sloughing off" junk. In those days there was no standard of values for old cars. Every dealer had to make his own

when they were re-sold. It was unsafe for any one but an expert to buy a used car, and as thousands of purchasers had been stung in the purchase of this class of merchandise, it soon became next to impossible to move an old car that was taken in as part payment for a new one.

### Revolution Has Taken Place.

A revolution has recently taken place. It has long been the writer's idea that every garageman and dealer should take in old cars at a right price, rebuild them on the



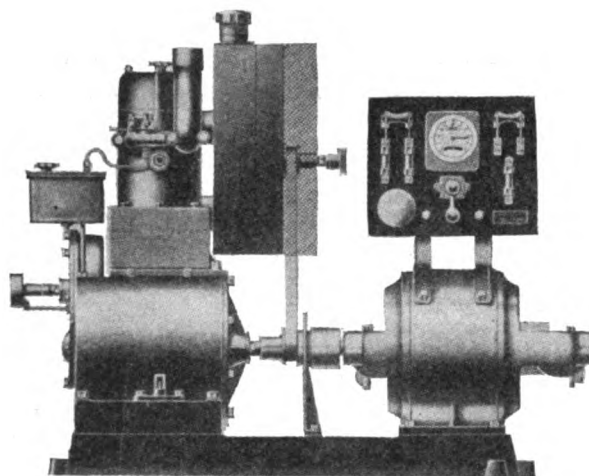
## The GENERAL GAS-ELECTRIC CO. of Hanover, Pa.

Announces to the Trade  
**The GENCO-LIGHT Power Plant**  
and Is in a Position Now to Appoint Dealers

The GENCO-LIGHT Plant produces electricity at four cents a kilowatt hour. It is the Ideal Farm Lighting Plant. Besides it can operate as a self-starting 2 H. P. gasoline or kerosene engine.

Our product is of very high grade. Our dealer's proposition is very attractive. The opportunity of representing a money-maker is yours now. Write for dealer's proposition. Our selling season is all year round.

**General Gas-Electric Co.**  
**Hanover, Pa. U. S. A.**



The above cut shows a GENCO-LIGHT Power Plant

## ROMORT AUTOMATIC AIR VALVES The Service Station's Friend

Style A



List Price \$3.00

hard, rough usage. Air is released only when the Valve is pressed on to the tire. Equipped with the famous Romort Pump Connection Rubber.

Style A Description

A guaranteed device that has no equal for free air stations. Will withstand any rough or hard usage and abuse. Recommended for any free air station or air storage plant, repair shop or any station that is subjected to

Style B Description

The Style B Automatic Air Valve is recommended to free air stations requiring a small and inexpensive air device. Stem fits any sized tubing, automatic in opening and closing, and guaranteed air-tight. Weststrongly recommend this Valve for private or public garages, vulcanizers, tire repair shops, etc. Equipped with Romort Pump Connection Rubber.

Style B



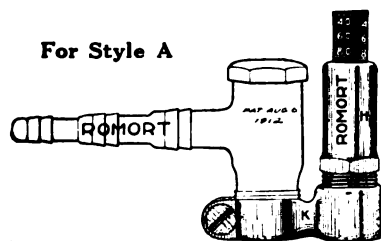
List Price \$1.00

## ROMORT TIRE TESTER ATTACHMENT

A Garage Necessity

List Price \$1.50

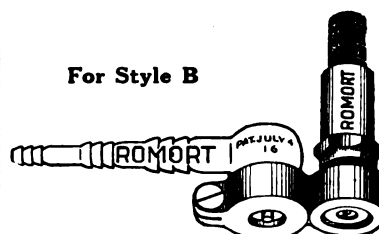
For Style A



A device for attaching your gauge to either Style A or Style B Air Valves, and gives the service station a permanent holder for its gauge, ready for instant use by the public. Simply screw your gauge onto the holder and you have a tire tester and tire inflater combined in one, and the old trouble of losing gauge is forever over. We sell only the holder attachment. Every garage with free air should be equipped with the Romort Tire Tester Attachment.

Caution.—When ordering, state whether for Style A or Style B Valve.

For Style B



**ROMORT MANUFACTURING CO., Seattle—Chicago**





The Louis Geyler Company Used Car and Repair Building, Chicago.

### Tremendous Possibilities Open to All.

The purpose of discussing this question in the *AMERICAN GARAGE AND AUTO DEALER* is to drive home to the minds of garagemen and dealers throughout the country the tremendous possibilities open to them in the used car business. Every garageman and auto dealer with repair shop connections should get into this line of merchandise activities without delay. The rule to adopt is: *Buy right, standardize your product, then sell right—that is, with your reputation and good faith behind the goods.* The adoption of this policy will increase sales of new cars and put the used car business on the map in your community in a way that it never was before.

The two objections on the part of the public buying used cars are, first, the unwillingness of the buyer to drive a shabby car, and second, the uncertain values. Under the plan here advocated, both objec-

tions are overcome. To all appearances the used car turned out is a new car, and the value of the product is definitely established—the buyer takes no gambler's chance when he buys.

It has long been widely understood that engineers and others familiar with the value of machinery could buy a used car and obtain big value for his money. This same rule will hold good under the new plan of merchandising with the general public, for this class of merchandise backed by the reputation and good faith of the high-class dealer and garageman will represent, dollar for dollar, better values than can be obtained in new cars.

What the Geyler-Paige element is doing in Chicago, and what other large dealers are doing in the East, can be done in the smaller towns and cities throughout the country and with equal profit and success. Gentlemen, go to it!

a personal interest in him, he goes out smiling, and when I present my bill at the end of the month, he readily recalls every item, and is always glad to write me a check for it, and to tell me while he writes it that his car is doing better than it ever has.

I believe in getting a good margin of profit out of both work and supplies, as it requires more time and more thought to keep a man's car running properly than it does on any other line of business in the world, and every customer remembers all the things a salesman told him when he bought the car longer than he will remember the ten commandments. These things told a customer by a salesman when he is trying to close a sale have more air bubbles in them than any other feature of the game, and Mr. Salesman can make more grief for the garage and repair man than all the rest of the world.

### Organize For Better Gas Profits.

As to gasoline situation, I am very sure the garageman is largely to blame for his small margin of profit in this line. If we should all tell the oil companies that we could not handle it, they would have to put in their own stations, hire the men to operate them, pay rents, buy gasoline outfits, stand losses and do without us fellows, and I don't think they would do it at all. If a salesman representing any other line of goods came into a garage and offered an article on the margin of profit that we get out of gasoline, and that represented as large a per cent of loss, we would laugh at him; but we go right on with the gasoline business because we are afraid it will take some trade away from us that the other fellow will get.

We must all quit or else all stay with it. We will have to organize to do any good.

### The Garageman's Guaranty, Service, Profits and Gas Situation.

BY E. B. JONES, BASTROP, TEX.

You ask for some new dope on increasing sales and profits, Mr. Editor, and I do not know as I have very many new ideas, but there is one idea that I have, new or old, which seems to me well worth more serious consideration.

My customers have more faith in my guaranty on an article I have for sale, or on my work, than they seem to have in the makers. It seems to me that if we can handle an article that we can guarantee right here in the place, say that we will make it good or refund the price, we can better satisfy the customer than we can to tell him that it is guaranteed by the makers.

They want to believe in the garageman; they want to come to him with their trouble just as a sick man wants to go to his doctor; they don't know what is the trouble with the car, but they do know that it is out of fix; they know that their tires do not wear as they should; that the spark plugs foul before they should; that the

battery does not hold up as it should; that the lights are not good; that the carbureter gives trouble; but they don't know where the fault is, and I am very sure that when we, as garagemen, can bring this customer to realize that we have his particular case really at heart, that we will do for him just as if it was our own car, we will sell him the same article we use on our car, adjust his carbureter just as we do our own, and that we are never too busy to spend a few minutes on him when he is in a hurry to go somewhere, he will learn to trust us.

### Getting the Customer's Good Will.

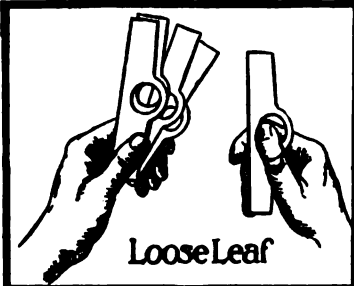
It is a cold-blooded proposition for a garageman to sit in his office and read the morning paper, and when a good customer comes in with a missing motor, yell at some boy that is washing a car to come and fix it for him. I find that if I meet my customer at the door, lean into his car before he has time to get out and ask his trouble, then either fix it myself or send for my best man to do it, then fill his radiator with water while the man is working over his motor, look at his oil gauge, his gasoline gauge, his tires, etc., and take

### To Dispose of Used Cars.

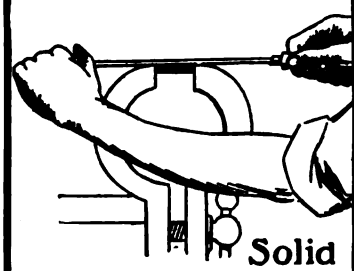
Fifteen dealers in York, Penn., have established a clearing house for used cars. Such cars will not be taken in trade nor bought from the owner. They will be handled through the clearing house or exchange, the ownership of which is entirely separate from any dealer's agency. The proprietors of the exchange are Frank B. Snyder and H. M. Heiges.

**S**ALESMANSHIP is the power of persuading people to buy at a profit that which you have for sale, be it merchandise or service.

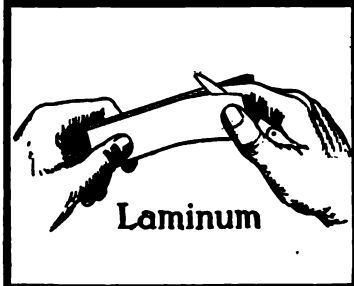
Are you a Salesman?



The  
Clumsy  
Uncertain  
Way.



The  
Laborious  
Time  
Wasting  
Way.



The  
Only  
Right  
Way.

## You Can Make Shims

in several ways; most of them expensive, inaccurate and unsatisfactory. The ONLY RIGHT WAY is to use

**LAMINUM**  
The MATERIAL for SHIMS

the way of all the clever engineers. Laminum is composed of innumerable layers or laminations of thin, smooth brass, all held firmly together by a metallic binder.

The making of adjustments demands less time with Laminum than is required with loose-leaf shims, at the same time offering greater accuracy. Laminum is indispensable wherever there is a split bearing, and is especially adaptable to marine motors of all makes.

The metal is manufactured in sheets 6 inches wide and 36 inches long, but the manufacturer is prepared to stamp it to any special shape desired. To obtain the proper thickness it is merely necessary to turn up a leaf of the metal at one corner of the shim with a sharp knife and then tear it off, just as sheet is torn from a pad of paper. As each layer represents exactly .002 or .003 inch, depending upon the thickness, it is possible to regulate the width of the shim with absolute accuracy.

Use Laminum and you will turn out better jobs at less cost.  
For repair work Laminum is put up in convenient assortments.  
Details on request.

**LAMINATED SHIM COMPANY, Inc.**  
531-541 Canal Street New York, U. S. A.

An  
Electric  
Sign



Will  
Keep You  
Busy

### Mr. Garage Owner, They Can't Lose You, If—

you install a compelling, trade-attracting Federal Electric Sign on the front of your garage.

You want more business — this is one of the best and cheapest ways to get it. Your Electric Sign is your trade mark. It impresses *your* garage indelibly on the automobile owner. It is the surest, quickest and the most economical means of keeping before the public.

Let us show you how cheaply and how effectively we can carry out your ideas. Address Department S.

**COMMONWEALTH EDISON COMPANY**  
Edison Building, 72 West Adams Street, CHICAGO

*If located outside Chicago address: Federal Sign System (Electric)  
Lake and Desplaines Streets, Chicago*

# How to Make the Shop Pay

## Waste Abounds in Many Shops—What an Expert Found—What He Decided To Do

By E. B. HINRICHSON,  
Mechanical Director A. A. G. O.

(Continued from the last issue.)

**P**ROVIDED with a card from the manager, the efficiency expert, whom we will call Mr. Brown, arrived at the garage a little before 7 o'clock one morning a few days later.

At this time the entire establishment seemed deserted, although the "night entrance" was open. Mr. Brown prowled around for some time looking for someone to whom he might present his card but, except for a small negro boy who was asleep on a cot in the repair department, he found no one.

At about 7:15 o'clock a man came in and taking a car from the floor, drove out. Mr. Brown wondered whether he was a customer or an employe, but at the time had no opportunity to find out. He was, as he later discovered, a customer.

Somewhere in the neighborhood of 7:30 the shop men began to arrive, followed shortly by one or two of the office force, and the day's business began.

### Watching the Shop Operations.

Mr. Brown watched the shop. The first man to arrive promptly went to work—that is, he woke up the sleeping boy, rolled a cigarette, put on his overalls and wandered about the shop looking for the car that Mr. Brown had seen leave some 15 minutes earlier. He gathered from the remarks made that the mechanic had been working on the car the day before and not only was not through but had left various small tools lying around it in places where they would be sure to fall off while it was out.

While this was going on, the remainder of the shop force arrived and with much talk and hunting of tools finally got to work. Mr. Brown noted the time. It was half past eight.

Business seemed brisk. Cars were constantly coming and going and there was work enough on the floor at all times but very little was accomplished, apparently. One of the men seemed constantly in demand for small adjustments and the work he was trying to do at the same time went very slowly. It happened to be a bearing adjustment job and he was working in the pit.

Mr. Brown kept count of the number of times he climbed out of the pit during the morning. He was called out eight times by customers and five times by other mechanics for advice or assistance. He seemed to be a good man and was as near a foreman as possible without being one. At any

rate, he seemed to be the man all the others looked to for advice if not for orders.

### All Knock Off at Noon.

At noon the entire force went to lunch. Two cars came in during the lunch hour but could not be attended to. One waited and one left. The men returned at different times between one and half past.

The afternoon was largely a repetition of the morning and quitting time seemed to be 5 o'clock. At this time the negro boy who had been asleep in the morning put in an appearance and went to work washing a car, and by half past five the whole place seemed as deserted as it had been at 7 o'clock in the morning.

Mr. Brown went home thinking. He tried to compute the lost time during the day but found that without keeping a close record it was guess work. Suddenly a thought occurred to him. He had spent the entire day in the building. He had access to every part of the building and had frequently been alone. During the whole day no one had asked him his business and the card he had received from the manager had never been shown.

### Card Indexed the Help.

That night Mr. Brown made up some cards to enable him to keep tab on the workmen. He went over a rough sketch of the shop arrangements and was of the opinion that in the beginning it had been well designed. He wished to eliminate the worst first and decided to start on the shop personnel. This is always a disagreeable job and he wanted to get it over with.

During the next few days he kept careful records of each shop employe by means of a card system and obtained some rather startling results.

Next month we will print copies of the cards, followed later by copies of the ones made after the "reformation." They will explain themselves.

(To be continued.)

### Some Effects of the War.

If the government does not accept the offer of the Ford Motor Co. for the use of its plant, the company will make a determined effort to make up its present shortage of 110,000 cars. The manufacture of trucks has been temporarily side-tracked and an additional huge plant is under construction to care for the present unfilled orders.

Government demands for aviation motors are absorbing the entire product of Hall-Scott Motor Co., makers of the

Fageol engine. As a consequence no new Fageol cars can be made until the government's demands are filled. The Fageol engine has the distinction of being the costliest made; the engine alone costing \$9,500.

Both the Indianapolis and Chicago speedways have called off their contests for 1917 or the duration of the war. Many of the racing drivers volunteered for government service even before war was declared. Not enough of the cracks would be available to draw the necessary crowds.

### Louisville Garage Rates.

Storage and other rates which prevail in Louisville, Ky., are conspicuously posted, framed and under glass and are as follows:

When gas, oil and grease are purchased from us:

#### Storage per Month.

Roadsters, small, list under \$1,400.....	\$15.00
Roadsters, large, list over \$1,400.....	20.00
Tour. cars, small, list under \$1,400....	17.50
Tour. cars, 5-pass., list over \$1,400.....	20.00
Tour. cars, 7-pass., list over \$1,400....	25.00
Coupes and enclosed drive cars.....	25.00
Limousine .....	30.00

#### Electrics.

Runabouts .....	\$30.00
Coupes, victorias, etc.....	35.00
Cars with Edison equipment, extra....	5.00

#### Transient.

Wash, polish and storage, first night..	\$ 2.00
Wash, polish and storage, each additional night .....	1.50
Storage ONLY, per night.....	1.00

#### Cleaning.

Wash ONLY .....	\$ 1.00
Wash and polish.....	1.50

#### Dead Storage.

One-third regular rate.....	Per month
Separate body storage, per month....	\$ 5.00

#### Repairs, per Hour.

Day labor, according to work.....	\$ .60
Night work and outside work.....	.90
Sunday and holiday labor.....	1.20
Shop room for chauffeurs when owners furnish tools.....	.60
Chauffeurs furnished to drive owner's cars (day) .....	.60
Chauffeurs furnished to drive owner's cars (night) .....	.60

Not responsible for cars left for repairs or storage in case of fire, water, cyclone or other accidents, or if car is damaged in delivery to and from our garage.

Not responsible for articles left in cars or in the shop.

### Dayton Airless and Pneumatic Tires.

Dayton Rubber Mfg. Co., Dayton, Ohio, has perfected plans for an entirely new factory building. Over \$2,000,000 in orders already are booked for the 1917 season, these orders covering both the Dayton Airless tires and the Dayton Pneumatic tires.

Dayton Airless tires are used chiefly on Ford cars, both pleasure and light delivery. A big field for their use, however, is on fire fighting equipment; over three-quarters of all American-built fire apparatus being equipped with the Airless tires.

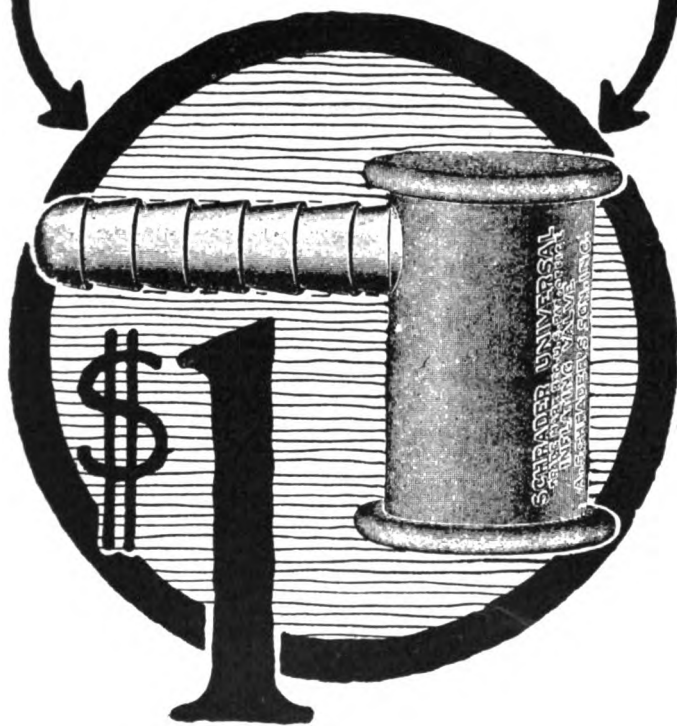
R. L. DeVoe, formerly Chicago branch manager of the Dayton Rubber Mfg. Co., has been appointed assistant sales manager and has taken up his new duties at the factory.



Thanks to this  
appliance your  
"Bottled Air" is  
automatically  
protected —

**SCHRADER**

Universal Inflating  
Valve



No sizzling free air can escape when a SCHRADER Universal Inflating Valve is used. The flow of air stops as soon as the SCHRADER Inflating Valve is removed.

Fits any diameter of hose from  $\frac{1}{4}$  to  $\frac{5}{8}$  inch. Incased in soft rubber; can bump against the car without denting it or marring the paint work.

PRICE \$1.00

**A. Schrader's Son, Inc.**

783-793 Atlantic Ave.

Brooklyn, N. Y.



A piston ring  
that is  
*unleakable*  
in all the term implies

The JOINTLESS embodies all the good qualities and features that can be put into a piston ring. It also possesses some exclusive features of its own that enable the motorist to get every ounce of energy and speed from the gasoline he uses. It is made and designed by experts and permits no wastage.

Two members of equal size and strength are assembled in such a manner that the strongest part of one backs up the weakest part of the other, assuring uniform distribution of tension.

Even when expanded to fit a worn cylinder or to take up its own wear, it remains UNLEAKABLE—a feature absolutely unique to the JOINTLESS PISTON RING. There are no outside joints to permit leakage, no exposed ends to score the cylinder, no carbon pockets, grooves or other irregularities in its outside surface. No dowel pins or delicate parts to break off—nothing to get out of order.

List Price Each \$1.00

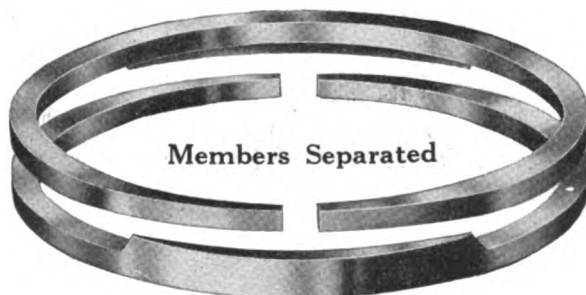
DEALERS and GARAGEMEN—If you want to handle a piston ring that will give invariable satisfaction, put in a stock of JOINTLESS. You will need them to supply the demand.

Write today for our dealers' proposition

**DETROIT PISTON  
RING COMPANY**

20 E. Jackson Blvd.,  
Chicago, Ill.

55 Richmond St.,  
Detroit, Mich.

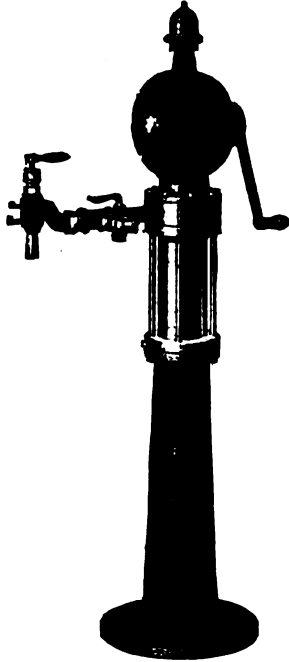




# Auto Accessories and Garage Equipment

## Shotwell Gasoline Pump.

Shotwell Pump & Tank Company, Indianapolis, Ind., is manufacturing a complete line of pumps and tanks for the handling of hazardous liquids.



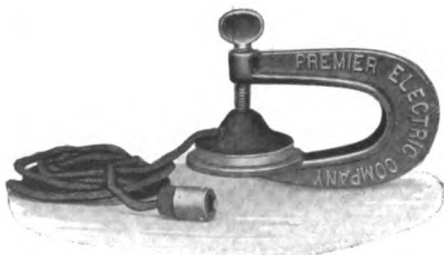
The Shotwell method as applied to gasoline pumps is shown in the above illustration. It delivers an exactly measured volume of liquid and does away entirely with the old style rack and pinion. Another feature is the elimination of the valve-in-tank system. The Shotwell valve is above the tank and can be cleaned easily.

The company is fully equipped to turn out its product, even to its own tool and pattern rooms.

Complete information and prices sent on application to the Shotwell Company.

## "It's It."

"It's It" is the name of a new tube vulcanizer put out by the Premier Electric Co., Ravenswood, Chicago, Ill. Accessory men are stocking it rapidly and find a ready sale for it.



It is operated electrically; taking about as much current from the storage battery as one light. It can be used in any kind

of weather; its electrical heat demanding no shielding nor can it flare or go out.

The results it assures; the time, trouble and expense it saves, render it a downright necessity and the manufacturers believe that its low cost (\$1.50 complete) will in itself be sufficient inducement for every motorist to purchase one to complete the tool kit equipment. Full particulars can be had from the manufacturers.

## Seat and Tire Cover Preparedness.

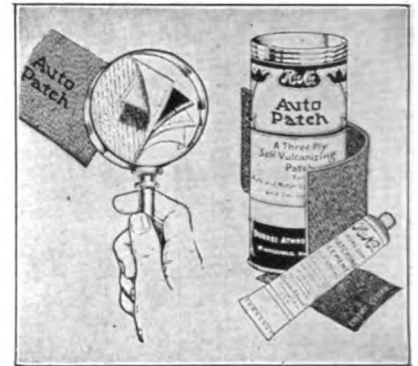
The J. P. Gordon Co. reports that they have just made a car load shipment of Ford Seat Covers and Tire Covers for all makes of cars to a jobber in Chicago and are making two other carload stock shipments to two other jobbers, one in the South and one in the South West, indicating the existence of a demand for these specialties and a desire on the part of the jobber of automobile specialties to be ready to make immediate delivery from his own stock when the spring rush comes on.

## Quigley Becomes Hal-Twelve Dealer

Announcement has been made by The Hal Motor Car Company of Cleveland of the appointment of C. A. Quigley of Salt Lake City as Hal-Twelve dealer for that territory. Mr. Quigley is one of the old time dealers of Salt Lake City and is, at the present time, handling in addition to the Hal-Twelve, the Chandler and Dort.

## Rie Nie Auto Patch.

Durkee-Atwood Company, Minneapolis, Minn., is having great success in marketing its Rie Nie Auto Patch. This is an emergency patch which can be used on casings, rubber hose, rubber boots, rubber coats, water bottles, auto tops, etc.



The method of application is simple and a guarantee is given for its satisfactory use. No cement is used; the patch setting immediately. After a tube is repaired it may at once be replaced and pumped hard; the tire then being equal to the hardest use.

Full particulars and terms to dealers will be sent by the company.

## The McMillan Auto Bed

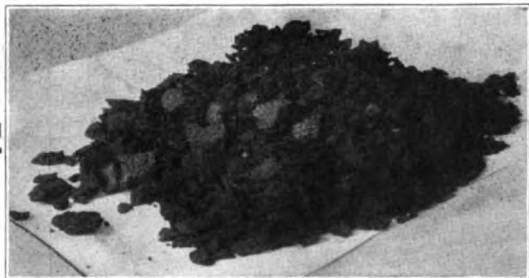


Auto Bed Company, Bellingham, Wash., has found a ready market for its device, the McMillan Auto Bed.

The illustration shows the operation of the device; made up on top of the car seats and giving the sleeper not only a comfortable spring bed but also protection

from damp ground and nocturnal wanderers.

The bed is sold under a trial guarantee and dealers have found it a source of decided profit. The Ford bed retails at \$8.50; for other small five-passenger cars, \$10. Full particulars from the company.



# AD-EL-ITE

T.M. REG. U.S. PAT. OFF.

MOTOR CARBON REMOVER

## BLEW THIS OUT

One cleaning with AD-EL-ITE Motor Carbon Remover loosened this pile of carbon from a clogged motor and left the cylinder walls spotlessly clean.

Here is a Carbon remover with a hundred per cent efficiency, and offers the dealer a solid profit on every sale. Motorists on your list should use it, and *will* if you only show them how it stops motor "knocks," back-firing and reduces the gas and oil consumption from 12½ to 25%, minimizes trouble and repair bills.

### SPECIAL

Sufficient AD-EL-ITE Motor Carbon Remover to thoroughly clean an ordinary car twice will be sent for 85c prepaid.

Sold in convenient sizes from 1-16 to 1 gallon cans.

Write for attractive dealer proposition and special electric display.

**ADAMS & ELTING CO.**

716-726 Washington Blvd., Chicago  
Toronto — New York

**AD-EL-ITE**  
T.M. REG. U.S. PAT. OFF.  
**MOTOR  
CARBON  
REMOVER**



## Your Guide for 1917 Needs

UNISCO is a positive guarantee of quality—a symbol of "HIGHEST Values"—an assurance of a standard of excellence.

### UNISCO Quick Detachable Belt for Ford Cars



Made of heavy double filled duck, folded in four ply, heavily stitched in 5 rows with special treated thread. Treated by UNISCO secret process, making them proof against hot water, oil, heat, stretch and shrinkage. Hooks will not pull out—correctly tempered—self righting. Can be fastened on hot motor without burning your hands. A remarkable value and a belt that will bring your customer back.

### UNISCO Endless 4-Ply Belt for Ford Cars

This belt is of the same material as the Unisco Detachable Belt. Heavily stitched and joined by special method, a belt that will popularize your store and increase your profits.



### UNISCO Specialties Include:

- Fan Belting in rolls.
- Rear Curtain Lights for Fords.
- UNISCO Stag Steel Belt Lacing.
- Alligator Steel Belt Lacing.
- Unisco Quick Detachable Belt Hook.

Add the UNISCO line of specialties to your stock; they will satisfy your customers and build your business.

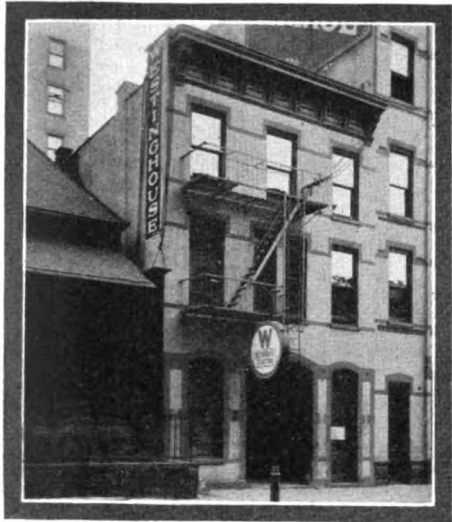
Write for catalogue

**THE UNITED SPECIALTIES CO., Inc.**  
CINCINNATI, OHIO



## Westinghouse New Service Station in New York.

Though deemed sufficiently large enough at the time to take care of the demands that would be made upon it for a long time to come, the service station opened in New York City by the Westinghouse



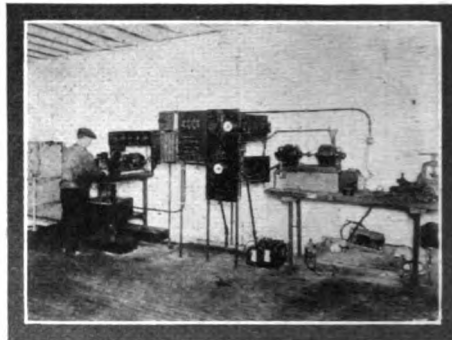
Electric & Manufacturing Company two years ago has, however, due to the rapid growth of this branch of the company's service, proved entirely inadequate, necessitating a move into larger quarters.

A new station has therefore been opened at 157 West 54th street, devoted exclu-

sively to installing and caring for Westinghouse automobile electric starting, lighting, and ignition systems. The new station occupies an entire three story building which has been carefully laid out to permit the highly specialized work carried on to be done with the utmost convenience, efficiency and rapidity. The entire ground floor is given over to a garage which has working space for six cars and idle storage for about as many more. Along the walls on this floor run two electric lines, one of low voltage for charging storage batteries, and another of 110 volts from which inspection lamps, electric tools, vulcanizers, and other devices may be operated. An air pump is also installed on this floor, located in a corner underneath the stairway.

A spiral staircase connects the garage with the shop on the second floor, where there are a number of work benches, lathes, drill presses, grinders and buffers, and other necessary tools. One of the most interesting pieces of apparatus on this floor is a device for testing generators. When a generator is brought in having symptoms that cannot be diagnosed by a careful inspection, it is removed from the car, clamped in this device, and driven by an adjustable speed motor. A series of meters mounted on a panel in front of the operator show clearly everything going on inside the generator under test, and the trouble, no matter how deep-

seated or obscure, can be located immediately. This device is shown in one of the accompanying illustrations. At the right of the same picture, is shown a



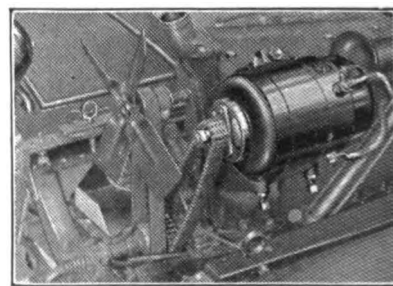
small motor-generator set for transforming 110-volt direct current into low voltage direct current for the battery charging line in the garage on the ground floor. The front part of the second floor is given over to offices, while the third floor is used for storage purposes.

One of the important parts of the work of this station is the sale of new motors, generators, ignition coils, and parts and accessories such as meters, fuses, lamps and switches. In order therefore to serve customers with the utmost dispatch, a retail counter has been installed, while behind it is a room stocked with every item and all parts of each item manufactured by the Westinghouse automobile equipment department.

At the present time, nine men, all of them having special experience in the manufacture, installation, and repair of electrical automobile equipment are employed at this station, and are always at the service of car owners.

### Genemotor.

A. J. Picard & Co., 1719-21 Broadway, New York City, are having great success in marketing the improved Chain Drive Genemotor. The 1917 model has been radically improved and is twelve pounds lighter, with no sacrifice of power.



The Genemotor fits any Ford and has ample power to spin any Ford engine under any condition. A gentle touch of the starting button does the work.

Dealers are handling the Genemotor, installing it in a few hours. It retails at \$85. Further particulars can be obtained from A. J. Picard & Co.

### Perfection Wheel Truing Gauge.

The American Spring Tire Co., 30 West Lake street, Chicago, is manufacturing the Perfection Wheel Truing Gauge. Of its needs and uses, they say: "Motorists who are not posted on the necessity of perfectly true alignment of the wheels of a car are often puzzled to know why, under similar conditions as to distance traveled and character of roads, one tire wears faster than another, or the front tires wear faster than those on the rear.

"The expert knows that this is due almost entirely to faulty alignment, and will prescribe occasional tests, but this has

the life of the tires. Sometimes the cause is the bending of the axle by a severe blow, or the steering apparatus gets out of adjustment or demountable rims are not on straight, or bearings become worn, allowing wheels to wobble. When this device shows the wheels are not running true, one of these causes will be discovered and the wheel or wheels out of order may be quickly adjusted with the Perfection Wheel Truing Gauge."

It is manufactured of cold rolled steel, finely finished, with fork ends of solid steel with embossed ribs to reinforce the forks. A spring arrangement automatically holds

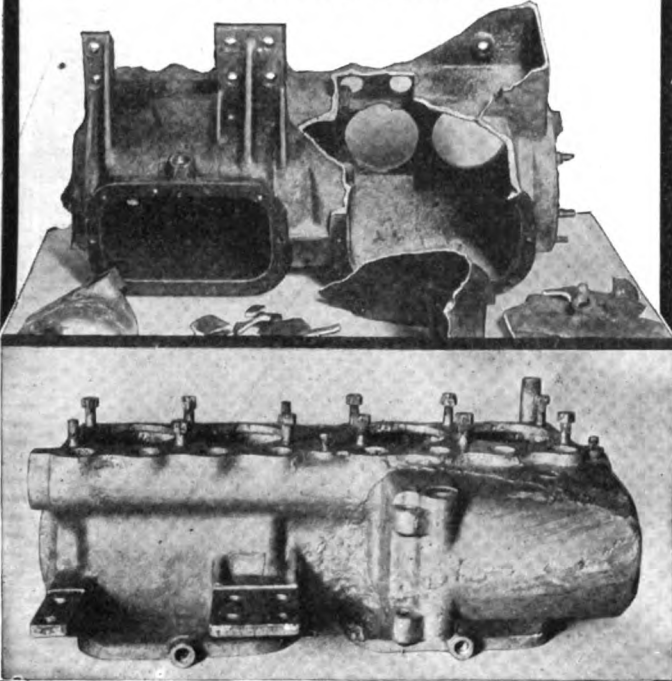


heretofore been difficult for even men of experience to make. With the Perfection Wheel Truing Gauge it is easy for even the amateur driver to test the alignment of his wheels and adjust them whenever necessary, which means the lengthening of

the gauge tight against the felloe of each wheel.

This wheel liner can be very readily and profitably handled by the garage and accessory dealer and the company is interested in effecting representation in all localities.

# Just Look at This Smash!



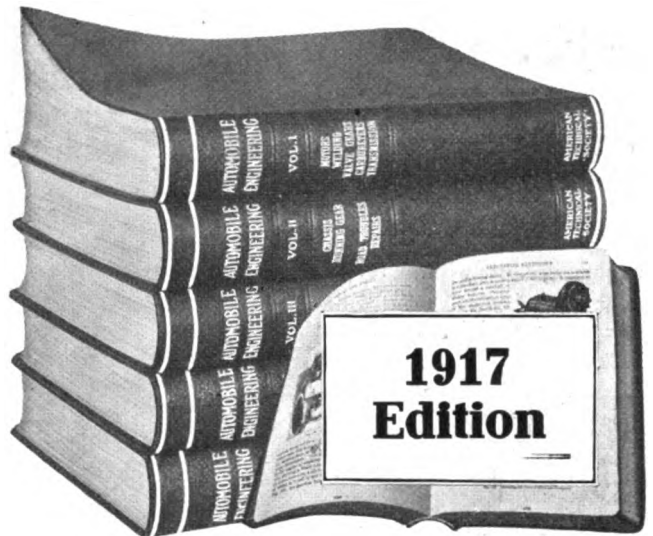
This is an E. M. F. Aluminum Crank Case, broken by a connecting rod coming loose. See how well it was repaired with an Imperial Oxy-Acetylene welding equipment. After preparing and re-heating, it took just 45 minutes to do the welding.

## You Can Do Such Work

You can make a handsome *profit* and at the same time add immeasurably to the *prestige and popularity of your garage*.

A letter to us will bring full particulars concerning oxy-acetylene welding and cutting, and how to do it. Also, information on our LEAD-BURNING OUTFIT suitable for burning storage battery plates and general custom lead burning. Write the letter *now*.

**Imperial Brass Mfg. Co.**  
529 S. Racine Ave. CHICAGO



## Automobile Engineering 50c a Week

**Y**ES, you may get this newly-written automobile library for only 50c a week (\$2 a month). The five thick volumes—which have just been printed—contain 2200 pages (5½x8¾ in.) and 2000 illustrations, diagrams and charts. Flexibly bound in genuine leather, gold stamped. Hundreds of pages explain all the up-to-date systems of ignition, starting and lighting. Welding, vulcanizing, and commercial garage equipment and operation is thoroughly covered. Carefully cross-indexed, so that the information you want can be referred to instantly. Handsomely bound in flexible morocco leather, gold stamped, these five volumes should be owned by every man interested in automobiles. They contain the combined knowledge of the greatest experts in the business, 2,200 pages (5½x8¾ in.) and 2,000 illustrations, tables and explanatory diagrams.

And for a limited time we are making an astounding offer. The regular price is \$25.00, but on a limited number of sets, we are making the very special price of \$16.80—and you can pay this rock-bottom price in easy monthly payments.

## Shipped Free

**on 7 Days' Trial** We'll send you the entire set, prepaid, for seven days' examination. Use the books just as if they were your own. See what it will mean to you to have this set always at your elbow. Then, if you decide you can do without it, send it back at our expense. However, if you decide to buy, send us \$2.00 after seven days and the balance \$2.00 a month.

## Free Consulting Service

With each set we give you, absolutely free, a year's consulting membership in the American Technical Society. The regular price is \$12.00, but you get it free with this set. Put your perplexing problems up to a staff of experts. Ask them any motor question you wish. The solution of one problem might easily be worth more than you pay for the books. Ask as many questions as you wish during the year.

**Partial List of Subjects:**  
Explosion Motors, Welding, Motor Construction and Repair, Carburetors and Settings, Valves, Cooling, Lubrication, Fly-Wheels, Clutch, Transmission, Final Drive, Steering, Frames, Tires, Vulcanizing, Ignition, Starting and Lighting Systems, Wiring Diagrams, Shop Kinks, Commercial Garage Design and Equipment, Electricity, Storage Batteries, Care and Repair, Motorcycles, Commercial Trucks, Glossary.

## Send the Coupon

Your name and address on the coupon brings the five books to you, express prepaid, for seven days' free trial. This offer is open to every resident in the United States and Canada. Act quick—while the offer lasts! Send the coupon today—NOW!

**American  
Technical Society**  
Dept. A7864  
Chicago, U. S. A.

**American Technical Society**  
Dept. A7864, Chicago, U.S.A.

Please send me the 5 volume Automobile Engineering for 7 days' free examination. If I decide to buy, I will send \$2 within 7 days and the balance at \$2 a month until \$16.80 has been paid. Then you send me a receipt showing that the \$25 set of books and the \$12 consulting membership are mine and fully paid for. If I think that I can get along without the books after the seven days' trial I will return them at your expense.

Name .....  
Address .....  
Reference .....



# Solves Broken Gear Problems

## Bailey Ball Thrust on Ford and Chevrolet Cars Keeps Gear Teeth Constantly in Mesh

There are about 800,000 broken drive gears per year on Ford and Chevrolet cars alone. A car with a broken drive gear is out of business until it is repaired. There was a deciding reason for all these



George D. Bailey.

breakages. A device that would stop them must be marketable.

This was the problem put up to Geo. D. Bailey, the inventor of the Bailey differential, and well known as an automobile engineer. Well, George did it. He submitted his design to Ahlberg Bearing Company, 2636 Michigan avenue, Chicago, about eight months ago, and practical tests under all possible conditions were made. As the result of the tests, factory equipment was assembled and the Ahlberg company contracted for the entire first year's output.

Mr. Bailey solved the problem by what will be called the Bailey Ball Thrust, taking the place of thrust washers on Ford and Chevrolet cars. There is an enormous pressure and wear on the thrust washers. This wear allows the gear teeth to get more and more out of mesh, with a consequent undue wear on the teeth. Then comes the time when the teeth fail to mesh and the damage is done. The car must be towed to a repair shop for a new set of thrust washers. The Bailey Ball Thrust is essentially a set of washers fitted with ball bearings. So far as months of test has proved, the Bailey thrust is indestructible.

A popular description of the Bailey Ball Thrust is as follows:

Due to the necessary angle of the teeth, drive gears constantly push away from one another when power is applied. Thus there is considerable pressure (thrust) on the thrust washers at left (gear) side of the differential. The present washers have a sliding instead of rolling contact and wear more or less rapidly, according to the load, so that on ordinary or bad roads, commercial cars, truck makers, etc., they wear down fast. When these washers, which are the only means of keeping the gears in mesh wear, they allow the drive gear to shift away from the drive pinion. When they wear thin enough, trouble is certain unless new ones are installed, and this trouble don't always happen near a garage.

The Ford and Chevrolet 490 back up the drive pinion with a ball thrust—why not do the same with the drive gear, which receives more than three times as much thrust? All other cars are so equipped because it was found absolutely necessary.

More power is delivered to the rear wheels, due to the absence of friction, and



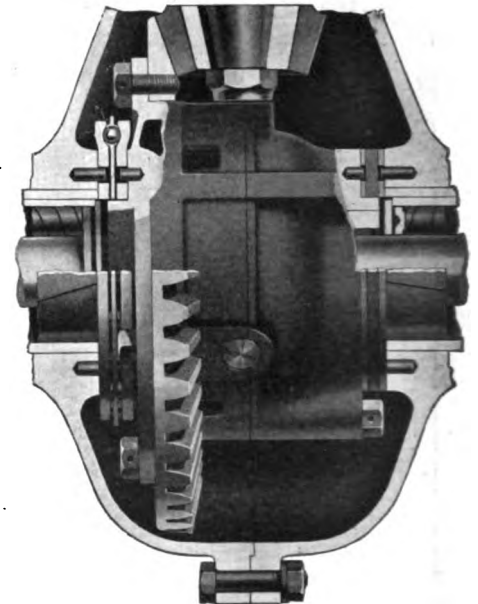
Bailey Ball Thrust.

many tests have shown about one mile more to a gallon of gasoline.

Made of best materials, carefully heat-treated and ground. Has 18  $\frac{3}{4}$ -inch balls of the highest grade and being compelled to make it very large in diameter to provide clearance, it has a capacity of six times the maximum thrust.

AMERICAN GARAGE AND AUTO DEALER

has been favored with advance information on this device. It will not be on the market until April 5, the Ahlberg Bearing Company preferring to prepare itself for what it is certain will be an almost universal demand from garagemen, dealers and repairmen, through whom alone the Bailey thrust will be marketed. No direct



Bailey Thrust Installed at Left Side of Differential.

sales will be made to car owners. The retail price has not been decided upon, but there will be a good margin for the dealer.

## American Curb or Roadway Gasoline Filling Outfit.

The American Oil Pump & Tank Co., of Central and Kindel avenues, Cincinnati, O., is distributing the American curb or roadway gasoline filling outfit. It is a quick and convenient way of handling gasoline and reduces the risk of fire to a minimum.



The American pump is a big, popular leader.



## Mr. Dealer

### There is Big Money for you in FORD BODIES

The Millspaugh and Irish line of Ford Coupes and Sedans is distinctive and different. They really transform Fords into handsome, graceful cars and enable owners to use them the year around. The very sight of one of our Sedans or Coupes makes the Ford owner desire it. An all-year-round seller.

The prices are moderate and the margin of profit to you is large.

Our Ford bodies are all of standardized dimensions and can be fitted to any Ford Chassis in a short time.

Write today for dealer's proposition

**Millspaugh & Irish**  
212 W. McCarthy St., Indianapolis, Ind.

## The Shotwell Method of Handling Hazardous Liquids

*Standard of Accuracy*

**K** NOW that there is absolutely no waste; be sure of the accuracy and economy of your filling system; see that it's Shotwell. You will find in this new system distinct advantages over all other methods. Does away entirely with the old rack and pinion. Accuracy of measurement absolutely assured. Large contact surfaces completely enclosed and protected from dust. Volume can neither be increased nor decreased through negligence, design or mechanical wear and tear.

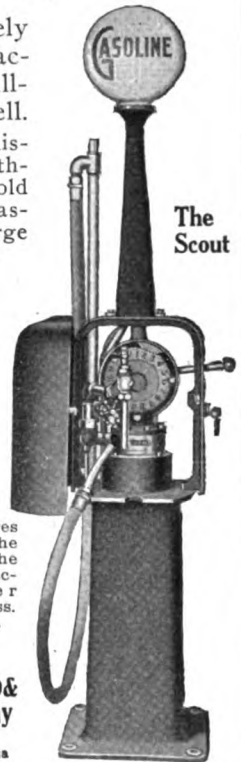


Located directly ABOVE the tank; not inside. Easy to get at through cast iron man-hole box which is part of equipment. Makes it easy to clean valves and intake screen; does away with old troublesome and expensive method. An EXCLUSIVE Shotwell feature.

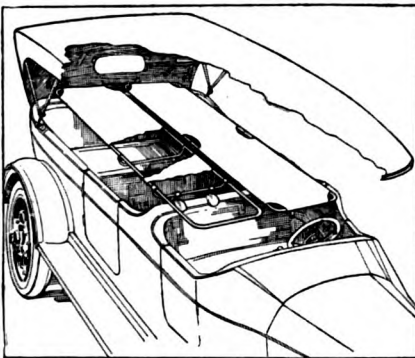
Storage systems and pumps for public garages, private garages, stores, factories, railroads, etc.; all embodying the features that make the Shotwell the standard of accuracy; never more, never less. Prompt deliveries.

Write for Catalogue

**Shotwell Pump & Tank Company**  
31 N. Alabama St.  
Indianapolis, Indiana



## SLEEP COMFORTABLY AND CHEAP



Cut showing 2 Kots placed side by side. Each one is 6 ft. long by 2 ft. wide.

the way. When in position the Kot lies perfectly level and is as comfortable as a bed. Weight 15 lbs.

### YOUR CUSTOMERS WILL WANT THIS

Every automobile owner who does any touring; every salesman who makes his territory in a car; campers, hunters, fishermen—any one who remains away from home over night with his automobile, can cut his traveling cost one-third and sleep comfortably in an "ANY-KAR."

Write today for full description and our proposition to dealers. One wanted in each town.

**PEORIA AUTO-KOT COMPANY**  
PEORIA Dept. 5 ILLINOIS

The "ANY-KAR" AUTO KOT will fit any 5 or 7 passenger car, adjusted in 1 minute to fit a Packard or Ford. Made of galvanized iron tubing, hinged in the middle and covered with 12 oz. ducking. When not in use can be folded and carried in the tonneau, out of

## THE NAME SPACKE ON AIR COMPRESSORS INSURES SERVICE-QUALITY-ECONOMY

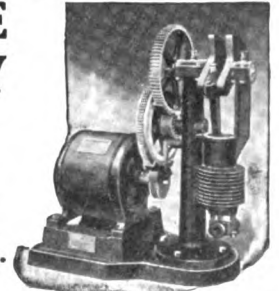
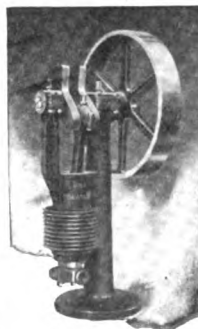
In the construction of Spacke Air Compressors the first thought is—quality—rigidity—endurance. It is possible to build cheaper air compressors than the Spacke, but if it were possible to build a BETTER air compressor—it, too, would be a SPACKE.

Install a SPACKE and end your air compressor troubles.

## THE F. W. SPACKE MACHINE COMPANY

WRITE US TODAY FOR PARTICULARS

Indianapolis, Ind.



# A Jack a Child Can Operate

**Built on the Worm Gear Principle  
Which Is Standard for Power and Safety**

The Service Corporation, with main offices at 1151 Frick Annex, Pittsburg, Pa., is introducing a new automobile jack, known as the Rees Jack, which appears to be an article of unusual merit. It is receiving a warm reception by the trade.

Heretofore the automobile world has accepted the old direct leverage ratchet jack, although it came far from satisfying their desire and caused them many anxious moments as well as bruised hands and soiled clothes.

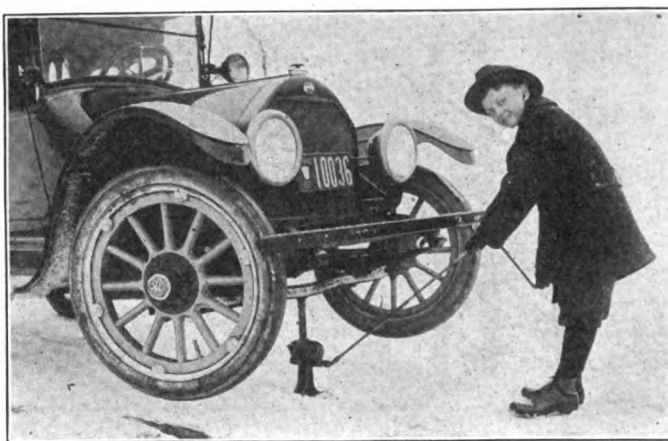
The Rees Jack is constructed along the most modern lines, being operated on the worm gear principle, recognized by the leading engineers and expert authorities as the most efficient method of applying power. Only four working parts are used and springs are entirely eliminated from its construction, each part being made from material selected for its strength and endurance. There

is nothing to get out of order and it is constructed in such a way as to be absolutely fool proof. The whole appearance of the tool denotes simplicity and durability.

Each jack is supplied with a long, detachable "Klock Key" collapsible handle. With the aid of this handle it is unneces-

sary to get under the car when operating the jack. This is shown in Fig. 1. A universal joint is placed on the handle where the connection is made to the jack

and by use of this joint it is possible to operate it from various angles. At times this proves quite an advantage. To raise a load, turn the handle to the right, as one would wind a clock, and to lower it, simply reverse the operation; there being no "dogs" or the like to throw. The rack will move only when the worm is turned and when the jack is upside down it will not fall out as is the irritating habit of most other types of jack. The finish is of green enamel, baked on, which makes



No. 1.

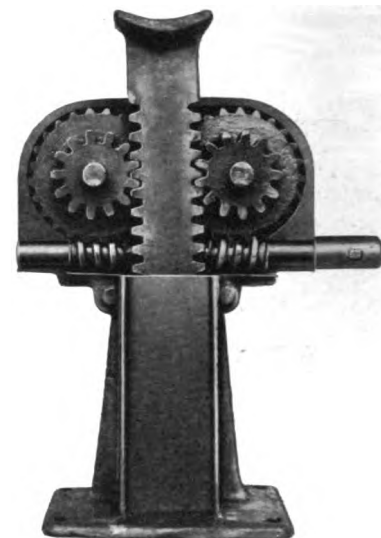
a very attractive article to be used in display work.

A front view of the working parts is plainly shown in Fig. 2. The two gears which are machine cut operate in opposite directions as the result of the worms being cut on different angles, one right and the other left. With the gears working against each other and the worm being of a good size and cut at the proper pitch, there is absolutely no chance of the rack dropping under a load. This of course is a big feature in itself and a strong recommendation for the jack.

In Fig. 3 the back part of the working parts is shown. On this side of the worm gears is a small spur which engages the rack on either side. These small gears being part of the larger ones naturally operate in opposite directions and by this principle the rack is raised or lowered by force applied to both sides which insures a steady and easy lift without the hindrance of the side thrust found in other jacks. Six teeth are engaged on the worm and four engaged on the rack, which means the strain must be divided at these ten points.

Fig. 1 shows the jack in actual operation. It is very plain that strength is not required in the operation of this jack as a small boy has just completed the raising of the entire front of a heavy car, both

wheels being six inches off the ground. The jack makes a strong appeal to the ladies on account of its ease of operation



No. 2.

and because it makes crawling under the car unnecessary.

## Truck Sales Are Large.

More than 4,000,000 worth of Packard motor trucks were sold to business men of the United States and Canada in January and February. Almost every line of business, large and small, is represented among the buyers.

Nearly all these trucks were sold into the domestic industries of peace. A very few orders from the United States army are included in the total, but none from foreign military establishments.

"The prosperous condition of the nation's business probably cannot be indicated more effectively than by this record sale of motor trucks," said R. E. Chamberlain, manager of the truck sales department of the Packard company. "I think the volume of truck sales is almost as faithful a barometer of general business as is the price of steel. For trucks are used to transport goods, and when more trucks are bought, it means more goods are moving.

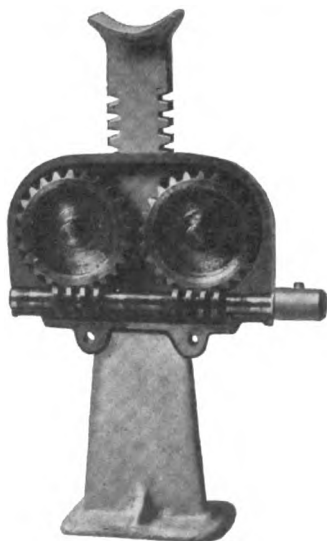
"Reports of our field representatives, and my own observations in recent trips extending as far west as Kansas City, lead us to believe that we can sell \$3,000,000 worth of trucks in March alone."

## Homes for Allen Employees.

Allen Motor Company, Fostoria, Ohio, has bought 150 acres near that city. It will be called the Allendale addition and is to be provided with all city conveniences. The site will be used preferentially for employees' homes.

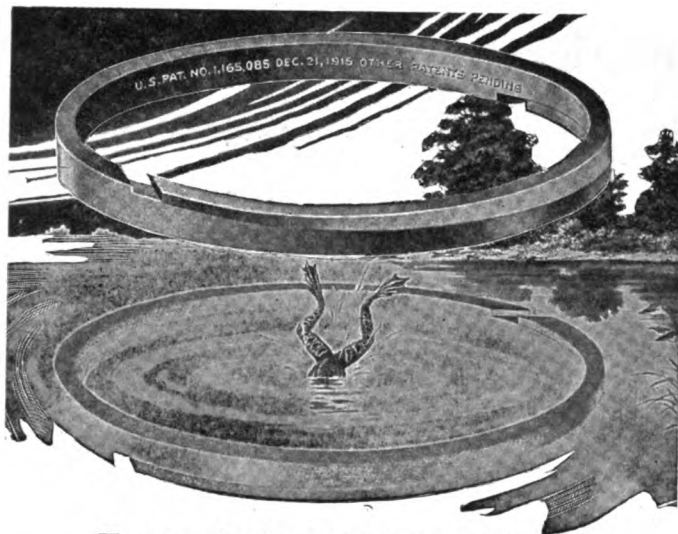
## Saxon Carried Full Insurance.

The recent damage to the Saxon plant, caused by a million dollar fire, was fully covered by insurance. The company was fortunate in having immense quantities of material on hand in outside store houses and work was interrupted but slightly.



No. 3.

sary to get under the car when operating the jack. This is shown in Fig. 1. A universal joint is placed on the handle where the connection is made to the jack



### Expands in a Perfect Circle

The Inland is absolutely gas tight because it has no gap and because it expands in a perfect circle, making positive contact with the cylinder wall. Strongest and most durable ring because ONE-WIDTH and THICKNESS all around. Low priced because it is ONE-PIECE.

Already the standard equipment on Franklin, Stutz, Pathfinder, Apperson, Hal 12, Weidely motors, etc.; used in 100,000 cars and now chosen for ARMY AEROPLANES. Inlands in any motor will produce

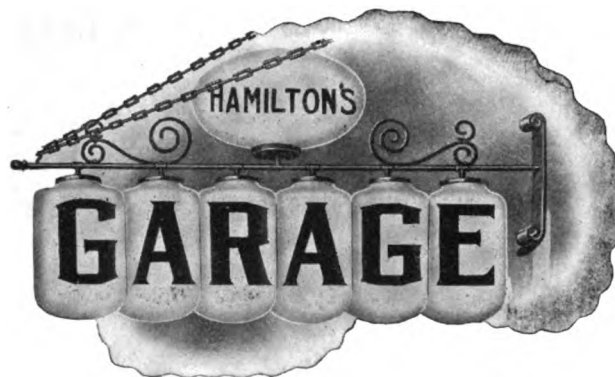
25% MORE POWER AND MILEAGE.

90 days trial—money back guarantee. Get our proposition.

Inland Machine Works, 817 Mound St., St. Louis, Mo., U.S.A.

# INLAND

## 1 PIECE PISTON RING



### "LIGHTS TWO SIDES"

Cost to run this sign at 9c per k. w. with 7-40 watt lamps 2½c per hour, or 5 hours at night 12½c a night.

Will pass Underwriters' Inspection anywhere in U. S.

## "CAN YOU BEAT IT?"

...MADE BY...

**The Dawes Electric Sign & Mfg. Co.**

Factories: No. 1 and 2 Arrott Power Building

Displays Room: 2004 Jenkins Arcade

PITTSBURGH, PA.

# COMPARE

## SPRING NUT LOCKS

Stamped in a single piece from sheet steel, bent and tempered. Slips easily on over the bolt, straddling a single thread.

Fits the widest variations in pitch of thread on bolts of same diameter.

Used on any style, design or manufacture of bolt and nut.

Tightened with a slight turn of the same wrench which is used to tighten nut against material.

Bottom disk or leg presses against nut; upper disk flattens down against bottom leg, bringing into play the powerful spring in the bend or hinge—a double hold.

Each leg draws deep into the valley of threads on opposite sides of bolt—a double grip.

Further tightening of nut against material is followed by lower leg of lock to extent of the spring.

Uses least length of bolt.

Fits practically flush with end of bolt.

Instantly released with wrench used on nut.

Usable over and over again as well as nut and bolt.



Upper cut shows Spring Nut Lock applied loose on bolt. Lower cut shows Lock tightened against bolt.

## Double Nut or Any Other Nut Locking Device

No threads to be cut; no complicated parts to fit in making.

No crossing of threads or difficult fittings on under- or over-size bolts when used.

No assortment of locks needed each for a different thread.

No changing to unknown makes of bolt or nut.

No special tools needed in applying.

Cannot distort or jam thread of bolt.

No pawls to jam, break, rust or get out of order.

Possible shrinkage of the material bolted together cannot release lock.

Practically no extra length of bolt to pay for.

No nuts sticking out to complicate designs of machines or catch and get in the way.

No locking device to pick out when nut is to be taken off.

## Then TEST Spring Nut Locks

for Simplicity, Economy, Durability and Efficiency on Tracks, Cars, Locomotives, Signals, Automobiles, Batteries or wherever Nuts Must Hold.

**"They Sell Themselves"**

Samples and Discounts on Application to

Spring Nut Lock Co., 643 Transportation Bldg., Chicago

## Hansen Automatic Air Valves



Model C. Price, \$2.50

The Hansen Automatic Air Valve is designed for use in Garages, Tire Service Stations, and Gasoline Filling Stations and all places where air is supplied for tires.

It will give more service with less trouble than any valve you may have ever used.

Instantaneous in action.

Does not leak.

Rubber washers do not come in contact with valve stem.

Guaranteed to give satisfaction.

Adopted by the largest chain of tire service stations in the country.

Sold by all the leading jobbers.

Distributed by

**Gray-Heath Company,**

1440 Michigan Ave.

Chicago, Ill.



Model D. Price, \$2.50



Model E. Price, \$3.00



# Three Additional Yale-8 Models

## Saginaw Motor Car Company Is Now Marketing a Four-Passenger Speedster, Two-Passenger Roadster and Permanent Top Phaeton

**T**HREE additional Yale 8 models have been developed this year by the Saginaw Motor Car Company: the four-passenger Speedster, two-passenger roadster and Permanent Top Phaeton. Heretofore the company has manufactured but one model—the seven-passenger phaeton.

All models are mounted on the same chassis and embrace the same specifications with the exception of body and seating. Color options are extended on all four cars, the choice being given between Yale blue and black or white and black. In either selection, the body and hood is painted one color, and the radiator, fenders and runningboard strip the combination color. The finish of the wheels is optional, preference however leaning to the white.

Aside from the color scheme which is distinctive, there are several body features departing from the usual construction. The wood body frame is reinforced with angle steel ribs to lend rigidity to the cowl and seats. Nearly one-half of the body is bent around the ribs and frame work in one piece, being what is termed as full-moulded.

The chassis is assembled of standardized parts. Timken axles and bearings are used exclusively. The frame is unusually heavy, being of  $4\frac{1}{2}$ -inch channel steel.

But one special feature is incorporated in the chassis, this being a specially designed rear spring of the three-quarter elliptic type, 54 inches long. It is this exceptionally long spring for this type, combined with the suspension balance aided by angle drop and the weight of the gasoline tank at the rear, that creates the riding comfort, according to the builders.

The Yale 8 is manufactured in the factory of the former American Electric Vehicle Company at Saginaw, a plant that was taken over practically completely equipped during 1916. Extensive additions have recently been authorized which will increase the Yale 8 output about 100 per cent by next fall.

Louis J. Lampke, formerly with the Calmer-Singer and Lyon Motor Car Company, is designer of the Yale 8 and chief engineer in charge of production.

Specifications are as follows:

Motor.—Eight-cylinder cast in block of

four and placed V-shaped at an angle of 90 degrees. Bore  $3\frac{3}{8}$  inches. Stroke  $4\frac{1}{2}$  inches. Unit power plant. N. A. C. C. rating, 31.25 hp. Front crank shaft bearings,  $1\frac{1}{2} \times 2\frac{3}{4}$ . Rear crank shaft bearings,  $1\frac{1}{2} \times 4\frac{1}{4}$ . Connecting rod bearings,  $1\frac{1}{2} \times 2\frac{3}{4}$ .

Clutch.—Multiple disc.

Transmission.—Selective type sliding gear, three speeds forward and one re-

lected alloy steel, special heat treated. Front springs semi-elliptic. Rear springs specially designed, three-quarter elliptic angle drop.

Axles.—Timken, front and rear, Timken bearings.

Brakes.—Two sets of brakes working on large steel brake drums, internal expanding and external contracting.

Gasoline Tank.—Fifteen-gallon capacity, located at rear of car, giving superior riding qualities as a result of proper distribution of weight.

Vacuum Tank Gasoline Supply.—The famous Stewart vacuum tank that guarantees a full carburetor on the steepest hill. Gasoline gauge located beside filler.

Fenders and Running Boards.—New design, modified "Crown" fenders. More beautiful and absolutely rigid.

Wheels.—Heavy artillery type, 12 spokes front and rear,  $1\frac{1}{2}$ -inch diameter. Firestone demountable rims.

Tires.—34x4, Non-Skid on rear, Goodrich.

Wheel Base.—126 inches.

Type of Body.—

French-American design, seven-passenger, auxiliary seats in tonneau folding into back of front seat, pockets on all four doors, luxurious upholstery, genuine leather.

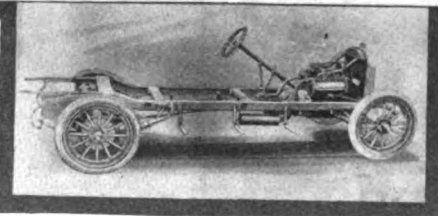
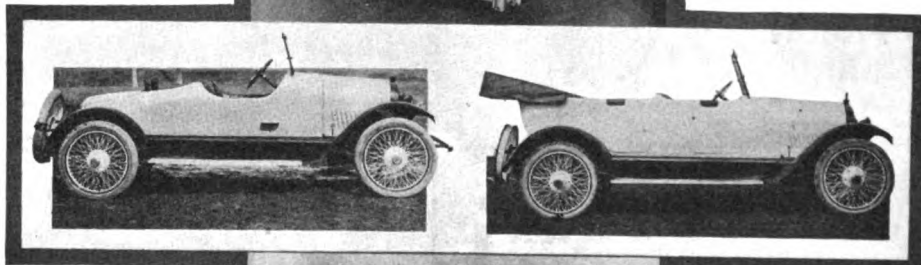
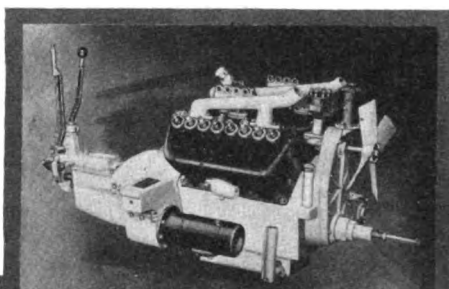
Color.—Standard, white and black, Yale blue and black without extra charge.

Equipment.—Victor electric lamps, Cowl light, ammeter, Stewart-Warner electric motor-driven horn; windshield—ventilating and rain vision, set at 15 degree angle; speedometer—Stewart-Warner; top—Neverleak one-man top; tools—complete kit of tools, including jack, pump and extra demountable rim; H.-R. "Neutrallock."

Price.—Touring car, \$1,550, f. o. b. factory; wire wheels, \$100 extra. Speedster, \$1,550, f. o. b. factory; wire wheels, \$100 extra.

Let the spring bee get into your bonnet, then spring something new in a merchandise way on your community. It will get you new trade.

If you want to stay young get enthusiastic over something. A man who gets an idea and grows enthusiastic over it will make himself younger by years.



verse. "Muncy transmission."

Control.—Left-hand drive. Control levers in center.

Carburetor.—Zenith.

Electrical System.—Two unit, 6 volt system, separate generator for lighting and motor for starting, Willard storage battery, 130 amp. hour.

Ignition.—Remy.

Lubrication.—Force feed to all main bearings and splash.

Cooling.—Thermo-syphon, extra large radiator, fin and tube style.

Frame.—Pressed steel, 47-16 channel.

Steering Gear.—"Lavine" spark and throttle, control on top of wheel, 18-inch corrugated steering wheel with aluminum spider, electric horn button in center of wheel, steering column held rigid by support to instrument board.

Drive.—Hotchkiss type.

Springs.—Highest quality carefully se-

# Demountable at \$1.00 A Wheel

Use Wooden  
Wheels  
Now on the  
Car and  
These  
New  
Bolts



## Draw Trade Your Way

Be first in your locality to get this proposition—just what the small car owner is looking for. It means fear of punctures, blow-outs and broken wheels banished forever. The HOLLAND LIGHTNING DEMOUNTABLE WHEEL OUTFIT does it. Once installed, wheel changes can be made by merely loosening six nuts. Changes made in three minutes—no soiled hands or clothing, no matter how dirty tires may be. Simple installation—use the wooden wheels now on car and replace old bolts and nuts with our special equipment.

## The HOLLAND Lightning Demountable Wheel OUTFIT

### For Fords and 490 Chevrolets

(Only Outfit That Makes Wheels on 490 Chevrolets Demountable)

Customers' price only \$4.00 East of the Rockies; \$4.50 West—for complete outfit. Liberal arrangements made with dealers who write quick. Dealers make profit on outfit, sell the spare wheel, extra casing, inner tube, tire carrier and cover at retail prices.

The Holland Demountable Wheel Outfit will attract and build big business for you. Money Back Guarantee—full instructions for installing and free wrench with each outfit.

Send This  
Coupon  
NOW—  
Attached  
to Your  
Letter-  
head

HOLLAND DEMOUNTABLE WHEEL CO.,  
Dept. 10, Holland, Mich.

Please send me your liberal proposition on the Holland  
Lightning Demountable Wheel Outfit.

Name.....

Address.....

# Add \$250.00 A MONTH EXTRA To Your Business

## REPAIR AUTOMOBILE TIRES

Sounds like a whole lot of money to clear extra every month. Seems almost impossible, but that is what hundreds of men are doing who have added a Tire Repair Department to their business. The investment is small, the profit large and returns quick and all cash, besides the demand for tire repairing and retreading is constantly growing. Your garage is by no means complete, your business is not as profitable as it can be until you get in on the Tire Repairing and Vulcanizing end.

## THE HAYWOOD TIRE REPAIR EQUIPMENT

Answers all the requirements to successfully handle this end of the business. With it and a little business judgment, success is certain. Every year adds thousands of new auto owners. They are looking more and more to economical tire service. The day of discarded tires is over, the Haywood Equipment makes this possible.

## HERE IS YOUR OPPORTUNITY

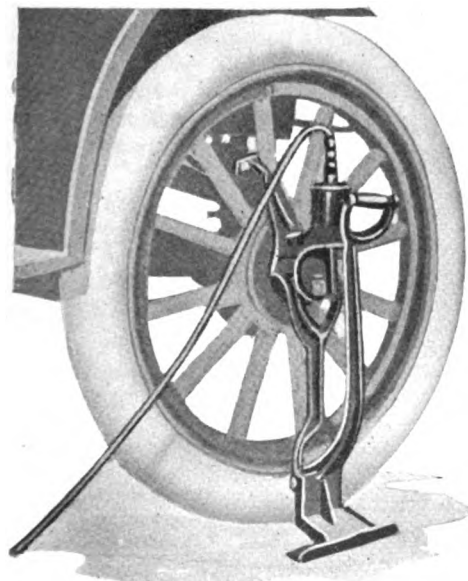


Either as a side line to your present automobile business or as a business by itself, the Haywood Equipment will make money for you. Tires go wrong all the time. You know that. Keep them in tune. Give your customers complete service—repair their tires and all. This builds business and makes you rich. Experience unnecessary. You can learn easy—or teach a boy to handle this end. Be the boss and make the money. Learn the details now. Investigate. Act quick. Be the first. Send name and address only. A postal will do.

HAYWOOD TIRE & EQUIPMENT CO.  
650 Capitol Ave., Indianapolis, Ind.

# FORD customers! will want the

## DONALD POWER TIRE PUMP



By letting the engine run on its slowest speed on high gear the rear wheel, which is jacked up, furnishes the power to drive the pump, which will inflate either of the other three tires, in from one minute to one minute and thirty seconds.

The DONALD Pump is designed to give the Ford owner a high class, efficient pump at a moderate price.

Live dealers should write for sales particulars.

DANVERS  
SPECIALTY  
COMPANY

DANVERS, ILL.



## Garage Signs

To the garage a Flexlume sign is a necessity—a business-pulling investment. Its raised white letters standing out from a dark background make not only a bright, distinctive night display, but an attention-pulling day sign.

A few dollars will bring a Flexlume garage sign to you, cash or easy payments.

Write for sketch and full information.

## FLEXLUME SIGN CO.

1450 Niagara St., BUFFALO, N. Y.  
St. Catharines, Ontario  
Electrical Products Corporation, - Los Angeles, Cal.

# The Law *and* The Garage Trade

*THIS department is edited by CHARLES C. BOMBAUGH, LL. B., general attorney of the American Association of Garage Owners, and a prominent practitioner in the federal and state courts; also lecturer and writer on commercial law. When information on any legal problem connected with the operation of your business is wanted, write this department.*

## NO LIEN ON ONE CAR FOR WORK DONE ON ANOTHER.

**Question.**—I did repair work on an old car to the extent of \$225.00 and cannot get my money. The party now has a new car which he stores in my garage. If he keeps on failing to pay up the old bill, can I hold his new car?—A. D., Wisconsin.

**Answer.**—You have no lien on the new car for work done on the old car and your remedy would be to sue the party and levy on the new car. If you have information to the effect that the party is about to sell or make way with the new car before you can get judgment and levy, you should sue out a writ of attachment on the car also.

The Wisconsin law provides that no garageman has a lien on any car in his possession unless he shall have posted in some conspicuous place in the garage a card stating the charges for storage, the same to be easily read at a distance of 15 feet by any person entering the aforesaid garage by the entrances.

But whether or not you have a lien, you have a claim which can be sued, judgment obtained and execution of the same made against the car in your possession or anywhere found within the state of Wisconsin.

\* \* \*

## COLLECTING SLOW BILLS IN KANSAS.

I have never written you about anything and now I am going to get acquainted with you and your ways of doing things. I get the magazine "The American Garage and Auto Dealer" every month and I sure read it and I say "amen" to the A. A. G. O. You are doing the business.

What I am writing you this time for is to see just what our law is in this state on collecting bad accounts.

**Question.**—Is there any way under our present law in this state that I might get my money out of these men? Some of them are worth it and some are not. Could I hold their car after they have run it out and had use of it as long as they have?

I want you to let me hear from you as soon as you can. Let me know and I also want you to tell me what you charge for collecting these bad bills. Now two of these men work on a salary and the other one is a farmer, but nearly everything he has is in his wife's name. Could I in some way get a lien on these men's salaries?

The amounts run from \$80.00 up to over \$100.00.—F. G., Kansas.

**Answer.**—Under the law of Kansas you have a lien for repairs, the Supreme Court of your state having decided that the law is applicable to blacksmiths, horse shoers, wagon makers, etc., and applies to garage men and motor vehicles; but the lien is lost when possession is given up unless a statement is filed with the register of deeds in the county within three days after the work is done. In any event you can sue, obtain judgment and levy on any property the debtors may have. In case a party is not responsible and has a wife, the chances are the car is in her name and she should be made a joint defendant.

I would advise, however, that you try our collection service before bringing suit, as this may induce a settlement. A national organization like the A. A. G. O. with a nationally circulated magazine like the AMERICAN GARAGE AND AUTO DEALER impresses these fellows with the idea that whereas they were dealing with one garageman they are now up against the united garage trade of the country. A different proposition, you see.

\* \* \*

## GARAGEMAN'S LIABILITY WHEN STORER HAS ARTICLES STOLEN.

On the night of February 27, J. L. Medlin, of Jacksonville, Fla., came into our garage at Daytona, Fla., for storage, and on the morning of the 28th his driver came for his car, drove out and in a short while came back and stated that someone had stolen a tire, tube and rim from the rear of his car during the night while the car was in the garage. He claims that he had two extra tires on the rear when his car was left for storage and that he only had one when he drove down the street and came back; now both these tires were under lock and key and he claims that whoever took the tire had a key that would fit his lock and after removing one tire they locked the other one up. We are open all night and have a night man that we have every confidence in and he claims that he never noticed whether this party had two tires on the rear or one and that no one was near this car during the night, as it was parked near the wall and behind several other cars which made it very unhandy to get to.

We issue a receipt for every car that is stored and this receipt is returned to us when the car is delivered to the owner. This receipt we have, and every receipt states that we are not responsible for articles, etc., left in a car as we have a

free parcel check room and all such articles should be checked.

**Question.**—Are we responsible to the storer for the goods he claims were stolen?

**Answer.**—You fully protect yourself against any claim of a customer for theft when you issue the form of receipt you do and secure a return of the receipt when the car goes out, unless there is some specific statute that provides otherwise, and we know of none such.

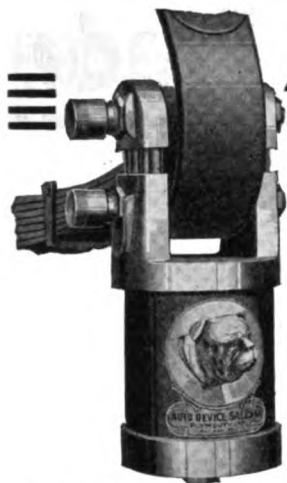
\* \* \*

## WORKINGMAN'S COMPENSATION AND EMPLOYERS' LIABILITY.

**Question.**—Last August we had an apprentice boy working for us and he was given orders to file the head of a bolt to fit a certain piece of work. Instead of filing it, he goes to the emery wheel or grinder to do it, thinking he could do it with less work. In some manner he got his finger upon the wheel and ground or jammed the end of it. We immediately sent him up stairs to a physician who dressed it after which we did not hear anything about him, only as he came in, and we paid him what was due him on salary and did not know until recently that we were under further obligations to him. Now another physician called us up and said he had a bill against us for \$24.00 for services upon this young man's finger and asked us if we were under the compensation law and had our help insured. I informed him that we were not. So he said he would hold us for his bill. What we want to know is, can he force us to pay the bill, as we never employed him, neither did we know that the lad had?

**Answer.**—The law of the state of Michigan and in practically all of the states makes the employer responsible for accidents of that kind. It is not possible that you can get out of paying the doctor's bill and it makes no difference whether you employed the doctor or whether the worker employed the doctor. There may be a point in his not having followed your instructions but that is doubtful, as the young man exercised his own best judgment and did what he thought was the quickest and best way.

Posting notices in your shop would not change the situation as the state law would apply just the same. Your only protection would be a policy in some casualty insurance company and the A. A. G. O. Insurance Department will guarantee to save you at least 10 per cent on regular rates, and it will try to save you as much more as possible. When our Inter-Insurance Exchange is fully under way with the help of the garage people, we can guarantee about 30 per cent and then be able possibly to save a good deal more.



## Bull Dog Shock Absorbers

*"Eat Up The Bumps"*

The eight-rod principle of these shock absorbers overcomes "excessive wearing out" — prolongs the life of the unit and eliminates the side and end swing.

Made for  $\frac{3}{4}$  and semi-elliptic springs. The former size can also be applied to the platform style of spring such as is used on the Cadillac, Packard, etc. The semi-elliptic style is for the Hudson Super-Six, Chalmers, Allen, Moon, Chandler, etc.

### Excellent Dealer Opportunities

Satisfaction guaranteed for one year.

\$15 & \$20 per set—(two).

When ordering give name of model, width of rear spring, weight of car, and specify whether touring or roadster.

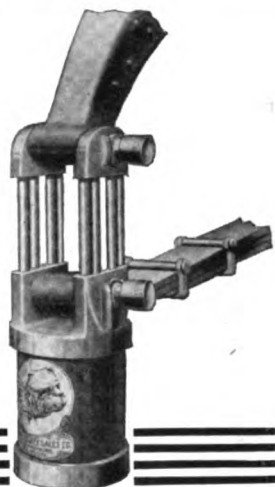
**Auto Device Sales Co.**

PLYMOUTH, IND.

Chicago Office

1240 Michigan Ave.

CHICAGO



## Ganschow Gears

are the standard of quality for the automobile industry. Our quick service has also made the names "GANSCHOW" and "GEARS" synonymous to car owners, garagemen and repairers.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or Foreign manufacture. Workmanship and quality guaranteed.

**William Ganschow Company**

1002 W. Washington Blvd., Chicago, Ill.



BEWARE OF  
IMITATIONS

The right-angle  
interlock is your  
safeguard



## PISTON RINGS

This perfect three-piece construction justifies the name—EVER-TIGHT. Note how accurately the right angles fit together. Engineers and Engine Builders acknowledge that this is the only proper construction for safety and prevention of leakage.

### Get Your Share of EVER-TIGHT Profits

Make money for yourself and save money for your customers by installing Ever-Tight Piston Rings in their cars. That puts you "in solid" with your trade and gives your bank account a boost at the same time.

Ever-Tight Piston Rings absolutely prevent leakage. They are guaranteed to give compression in out-of-round cylinders as well as in true ones. They produce more power—thus reducing maintenance cost.

Ever-Tight Piston Rings consist of three separate parts grooved together into one ring by its own right angle interlock. They fit tight, without binding. They are flexible, and friction is reduced to the minimum. The Ever-Tight is the only perfect three-piece piston ring on the market. It is the leader.

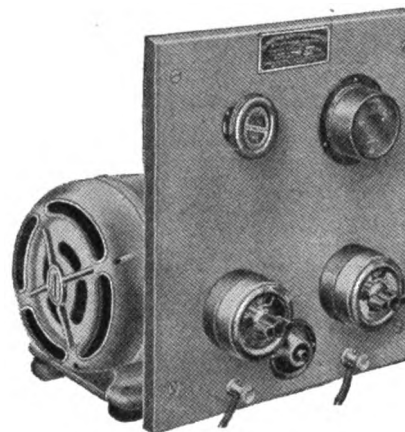
It's up to you to investigate Ever-Tight Piston Rings for your own sake as well as your customers'. If dealers do not carry Ever-Tight Piston Rings, write us direct.

**Ever-Tight Piston Ring Co.**

1431 Chestnut St.

St. Louis, Mo.

A Big  
Thing  
for the  
Garage  
and  
Repair  
Shop



## ELLINGTON

### Small Battery Charger

simplifies and facilitates battery charging and puts it on a more profitable basis.

Is a compact little outfit and in operating on 110 or 220 volt 60 cycle is a 50 volt motor generator capable of charging from 1 to 5 sets of 6 volt batteries or up to 10 sets in series parallel. Requires no attention when charging, can't burn out regardless of how handled, will withstand overload and so low in price that every Garage and Repair Shop should use one to supply the needs of the motoring public.

We have all the information you require. Write.

**ELLINGTON ELECTRIC CO.**

Quincy, Illinois



# Doings in The Garage and Auto Trade

## Middle States.

H. M. Gromald, Eldora, Iowa, already is crowded with business in his new garage.

J. P. Paulson, Clermont, Iowa, is operating his new garage.

Ald. A. W. Wilson, Hastings, Minn., is well along in the work of rebuilding his garage. It is a two-story, 72x140 ft., brick building.

Frank Schoenhair, Eagle Grove, Iowa, has sold a half interest in his garage to Henry Larson.

Stewart Garage, Delavan, Wis., has been entirely rebuilt and is doing a good share of business.

White & Galloway, Barnesville, Ohio, are the new owners of Barnesville Garage Co. They are making many improvements. Overland cars will be handled.

Guelker & Tlemeyer, Beardstown, Ill., are completing their new garage. It will be complete, even to an extensive painting department.

E. C. Simkins, Colwell, Ohio, has been forced by increased business to materially enlarge his garage.

Metcalf & Hoff, Auburn, Ind., are nearly ready to open their new garage in the McIntyre building. Several makes of cars will be handled in addition to a general garage business.

J. R. Williamson, Savanna, Ill., has begun business in his new garage.

Barber Garage Co., Ashtabula, Ohio, has remodeled the Rockwell building into a fine garage and repair shop. Empire and Dodge cars will be handled.

Harvey Smith, St. Mary's, Ohio, has bought the East Side Garage and will operate it for storage in connection with his Dodge agency.

Guy Coleman, Canton, Ill., is doing a big business in his new garage. It has fine office, show and accessory rooms.

Steele & Summers, Malvern, Iowa, are the new proprietors of the Fouch Garage. Material improvements are being made.

P. E. Russell, Galva, Ill., has practically completed the remodeling work on the livery barn and will have one of the most complete garages in that part of the state.

Yader Bros. Garage, Goshen, Ind., was forced to build a large addition by its press of business.

Rike & Lavring, Arnold's Park, Iowa, are doing business in their new garage. Both are experienced automobile men.

Chester Repair Co., E. Liverpool, Ohio, is making rapid progress with its new brick garage.

Simpson Garage & Machine Co., Newark, Ohio, is completing its 45x85 ft., brick and steel, \$7,500 addition to its present garage.

Reese Motor Co., Chariton, Iowa, will soon be installed in its new 82x105 ft. brick garage.

Joseph Ingold, Bloomington, Ill., will open a garage in the new building now being erected by J. J. Molls.

Ed. Hollingshead, Plymouth, Ind., has opened a repair shop and is doing a good business. He has had fifteen years' experience in repair work.

Charles Stein, Bloomfield, Iowa, has opened a garage in the Conrad building.

Horsly & Streiff, Monticello, Wis., have added the North Side Garage to their holdings and have made it their headquarters. The former Horsley Garage will be used mainly as a display room.

Houghton & Baker, Owosso, Mich., are completing the work of remodeling the

opera house into a garage. They will specialize in Ford cars and accessories.

George Netzt, Dixon, Ill., has nearly completed the additions to his garage. The improvement will give him a good showroom.

Edward Eckhardt, Marshalltown, Iowa, has bought out E. H. Helleman's interest in their garage.

Charles A. Gower, Lansing, Mich., proprietor of Union Garage, is putting up a second story and otherwise enlarging his building.

Temple Garage, Jackson, Mich., is installing a 200-ton hydraulic press to apply hard rubber truck tires. Cotton-Ziegler Co., the proprietors, are specializing in truck work.

Charles B. Headley, Cherokee, Iowa, has bought the Lauer & Rogers Auto Co. and will add materially to the service department, handling also an auto agency.

Frank Fitz, Richmond, Mich., has nearly completed his new garage.

Buell Black, Hillview, Ill., has 6,840 square feet in his new garage. There is ample room for storage and a new repair shop.

Thure E. Lareon, Paxton, Ill., has bought out his partner and will continue for himself the business of the Star Garage.

White Auto Co., Grafton, Neb., has opened a new garage and repair shop. Ford cars will be a specialty.

Warnock & Davis, Spring Valley, Ill., have bought and are now operating the Morris Garage. Each member of the new firm is an experienced automobile man.

Mark Hay, Kewanee, Ill., proprietor of the Kewanee Garage, has leased the Merritt building and is transforming it into an up-to-date garage. Repair work will be done in the old garage, the new space, about 44x140 ft., being devoted to sales rooms and accessory stocks.

West Bend Motor Co., West Bend, Wis., has completed its new garage and showrooms.

Charles Warfield, Bloomington, Ill., is pushing the work on his new \$12,000 modern garage. It will be 80x150 ft.

Lawrence Service Garage, Hastings, Mich., has added materially to the material and personnel of its repair department.

Smith & Pain Auto Co., Eagle Grove, Iowa, have bought the Smalley Garage and will use it as a service station and accessory line. They will handle only the Buick and Velle cars.

Alva Stocker, Greenville, Ohio, has bought and is now continuing the vulcanizing and auto supply business of J. H. Byard.

W. O. Baker, Akron, Ohio, has bought a half interest in the Wadsworth Garage.

Larson & Lundberg, Kewanee, Ill., are putting up a large, two-story addition to their present extensive garage. It is strictly modern and will add about 15,000 square feet, a total of 25,000 square feet.

Powers Bros., Paulding, Ind., have bought and are operating the Bybee Garage.

O. V. Foster, New Albany, Ind., has bought the Frank Farmer interest in the New Albany Garage Co. He and M. D. Sittason will conduct the business.

Ross Harold, Marlon, Ind., is operating his new garage.

Williamson Garage, W. Union, Iowa, has enlarged its repair department and will run a Ford service station.

Alliance Motor Car Co., Alliance, Ohio, has obtained the services of W. F. Sauer as garage manager.

Eichhorn Bros., Bay City, Mich., have

completed and are now doing business in their new garage.

Brown Latimer, Steubenville, Ohio, is completing his new, fire-proof, 25x100-ft. garage.

Whiteside County Auto Co., Clinton, Iowa, has practically completed its new garage, the Fulton opera house having been remodeled for the purpose. It is fire-proof, with abundant room for repair shops and display. Special machinery for Ford car service is being installed.

W. A. Sewall, Clinton, Iowa, has conducted a strictly storage garage, but now is fitting his new brick building for every department of garage work.

William Shaffer, Upper Sandusky, Ohio, has leased the Beidler building and opened a garage and repair shop.

Ellsworth Garage, Charlevoix, Mich., has begun business with a complete equipment for storage, repairs and supplies.

Will Mortland, Oskaloosa, Iowa, has opened a new garage and repair shop. He specializes in Fords.

Glenn Hoover, Quincy, Ill., has rented the King & Matthews building and opened a garage and repair shop.

Frank Murphy and James Garvey, Freedom, Wis., have opened a new garage and were crowded with work from the start.

Roy Jones, Petersburg, Ill., has bought the Shipley & Houghton garage building and will conduct a first-class garage.

Ben Hassenger, Ishpeming, Mich., has opened a garage in the Myers building. He will specialize in Ford repair work.

E. B. Cooke, New Philadelphia, Ohio, has bought and is now managing the R. O. Finger garage.

White Garage, Havana, Ill., with its recent additions, now holds the title of "The Biggest Building in Havana."

Wertz Bros., Frankfort, Ind., are the new proprietors of the Service Garage. They will specialize in repairs and accessories.

John Petersen, Durant, Iowa, is rapidly completing his new garage on the River-to-River road.

Carbee Bros., Lisbon, Iowa, are doing a good business in their new garage.

Service Garage, Grand Rapids, Mich., Seth Stevens and Otto Wilber, proprietors, are doing a large business in their new plant.

## Southern.

Silger & Bird, Rock Port, Mo., have gained so much business in their enlarged garage that another addition is necessary.

Bryant-Burger Auto Co., Athens, Tenn., has begun business in its new two-story, brick garage.

P. F. King Motor Co., Woodsdale, W. Va., has practically completed its new garage. A paying business is ready for the opening.

Steam Car Agency, Huntington, W. Va., has established a complete garage for the storage and repair of steam cars exclusively. In addition to the garage and repair shops, the Stanley Steamer will be sold.

Samuels Bros. & Berley, Mansfield, La., are doing business in their new garage.

Universal Car Co., Hamlet, N. C., has opened a garage and service station.

McPhail Motor Co., Rockingham, N. C., has sold its plant and business to Universal Car Co.

J. M. Nabors, Jr., Mansfield, La., has completed his garage and is doing his share of the business.

Hall-Gibbs Motor Co., Inc., Portlock, Va., has superceded the Williams Garage and



## Seven Miles More to a Gallon of Gas

That's what the Willard Super-Heater will give on a Ford. Intensely practical—can be attached in ten minutes. Outlast an automobile.

Through the introduction of superheated air into the standard Ford carburetor, by the WILLARD SUPER-HEATER, the gasoline is completely vaporized, securing the full efficiency from the gas and requiring less amount per charge; consequently more mileage per gallon.

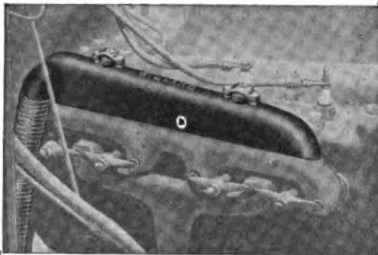
### Good in Any Weather Indispensable in Cold Weather

**DEALERS:**—The high price of gasoline makes the Willard Super-Heater a necessity. Every Ford owner is interested—every Ford owner a live prospect.

Ask our Sales Department about our Agency proposition for open territory.

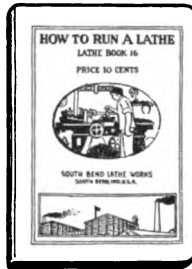
Retail Price \$5.00

**Willard Company**  
South Bend Indiana



## SOUTH BEND LATHES

Established in 1906



**HOW TO RUN A LATHE**  
A 64-page book for 10 cents, post-paid. Coin or stamps accepted.

**The Practical Lathe for the Machine Shop and Automobile Repair Shop**  
13-in. Lathe, Complete, Prompt Delivery  
14 " " " " " "  
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**STRAIGHT AND GAP BED**  
Send for free catalog giving prices on the entire line.

**South Bend Lathe Works**  
501 E. Madison Street - South Bend, Ind.

## MONOGRAM OILS and GREASES QUALITY SERVICE

Used exclusively and recommended by more manufacturers of automobiles than any other oil on the market.

**THE MAKERS of MONOGRAM**  
*New York Lubricating Oil Company, New York*  
BRANCHES IN PRINCIPAL CITIES

**\$360 + \$10 = \$1500**

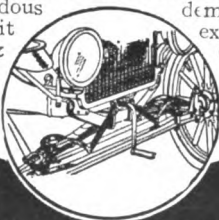
NO--This Is Not a  
Mistake \$10 Will Make a Ford  
Ride as Easy as a \$1500 Car

**W. & C.**

Original Double Arm Shock Absorbers give Ford cars the smooth riding qualities usually found only in heavier and much more expensive cars.

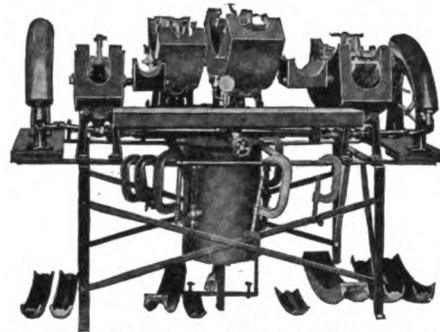
They make good because they combine all the best shock absorber principles. **DEALERS**—Write us today.

The W. & C. Shock Absorber is a source of big spring business. Its efficiency and moderate price are creating a tremendous demand. We are advertising it extensively and every W. & C. user is advertising it for us. Write us at once.



**PHILLIP H. WEBBER & CO**  
**HOOPESTON, ILLINOIS**

## Vulcanizing With a Vanderpool Vulcanizer Brings Big Profits



3 Cavity Combination Vanderpool Vulcanizer

Here is an exceptional opportunity for Garages as well as Vulcanizing Companies to secure a vulcanizer that will turn out high-grade work at a small cost. The fuel saved alone, will pay for the machine in a short time—then you will "cash in" on your investment. This plant, the Vanderpool Vulcanizer, is meeting with enthusiastic approval of hundreds of satisfied users all over the country. Unsolicited testimonials from the various companies now using the "Vanderpool" testify to the dependability, efficiency and economy of this "Vulcanizing Wonder." One man writes that the "first month's profits paid for the plant." No experience needed—we teach you. It occupies very little floor space, and "once bought, you will never have to buy again."

Send in this ad with your name and we will mail catalogue and prices.

**VANDERPOOL COMPANY**  
Box 33 SPRINGFIELD, OHIO

is located in one of the most complete garages in the state. Repair shop, storage rooms, accessory room and offices are installed adequately in the new building.

Stringfield & Son, Danville, Ark., have established a new garage.

J. L. Enyart, McFall, Mo., has completed his new brick and cement, 50x150-ft. garage. Half the building is of two stories and the front is nearly all glass; one of the best garages in northern Missouri.

Central Garage, Wheeling, W. Va., with its four floors, complete repair department and show and accessory rooms, has opened with a big business.

Bruce H. Seabright, South Wheeling, W. Va., has opened his new garage in the remodeled Atmus building. Accessories and repair work are specialties.

Elliott Motor Co., Suffolk, Va., is pushing work on what will be the largest garage in the state. It will be of brick, steel and

glass, two stories, and have 35,000 square feet of space.

W. L. Blanks, Hamburg, Ark., has bought the Ashley garage, and much additional equipment has been added. P. L. Emmett remains as mechanic.

Ford Garage, Shreveport, La., has begun business. Nothing but Ford work and accessories will be handled. The plant is said to be absolutely complete.

Templin, Carter & Magers, Jasper, Mo., are the new proprietors of the Rice-Love garage.

Raymond Walker, Little Rock, Ark., has opened a large stock of automobile supplies in the remodeled building at 116 Main street.

Foreman Automobile Co., Louisville, Ky., is making rapid progress with its new \$30,000, two-story, fire-proof garage, with its 292-ft. glass front. It will store 300 cars and be one of the best garages in the state.

Wiley M. James, Baird, Texas, is building a fine 50x130-ft. concrete and glass garage. J. A. Beal, Mountainair, N. M., is starting his new garage with an abundance of business.

Jones & Norrell, Weatherford, Texas, have bought the Weatherford Auto Co.'s garage to accommodate its overflowing business.

Nical Garage, Frankfort, Ky., has bought the Mason & Hoge building and is converting it into a modern garage. This is the third time Mr. Nical has been compelled to buy larger quarters.

Sherman Dils, Parkersburg, W. Va., has bought the interest of his partner, B. F. Stout, and will continue the business.

D. D. Daggett, Jennings, La., has his new concrete garage and salesroom well along toward completion.

Gem City Garage, Phoenix, Ariz., is occupying temporary quarters while its building is undergoing material enlargement.

**YOUR CUSTOMERS WILL WANT THE TWICHELL GAUGE**

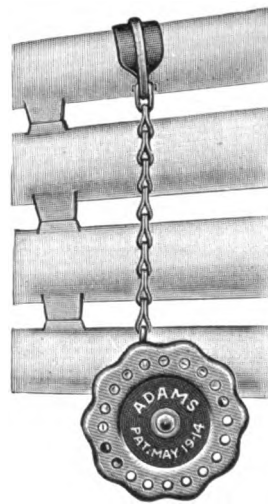
Because it will save "hundreds of dollars" of tire expense—

The Twitchell Air Gauge by establishing its claim that it is the best gauge to USE, should appeal to you as the best gauge to SELL.  
It is "Tire Insurance for One Dollar."

**The Twitchell Gauge Co.**  
200 Michigan Ave.,  
Chicago, Illinois, U. S. A.

## Adams Auto Top Holder

**"STOPS THE RATTLE—SAVES YOUR TOP"**  
**NEATEST—QUICKEST—STRONGEST**



Dealers everywhere will find a ready sale for this best of all Top Holders. **An ornament to any car.** No unsightly projecting arms, nor dangling straps. Can be installed in two minutes, and operates quicker than any other.

Two sizes —  $\frac{5}{8}$ " holes for small cars.  $\frac{3}{4}$ " for large ones.

**Price \$2.00 per pair**

*Write for Discounts to Dealers*

**ROCK ISLAND MFG. CO.**

Department C

ROCK ISLAND, ILL.

SINGLE ROW

DOUBLE ROW



THRUST

ROLLER

**REGROUND—NEW—EXCHANGED  
STEEL BALLS**

*Special Front Wheel Bearings for Fords*  
Satisfaction Guaranteed

1919-1921 Michigan Avenue - CHICAGO

Philadelphia

Frankford, Pa.

Boston

New York

**Do Business by Mail**

It's profitable, with accurate lists of prospects. Our catalogue contains vital information on Mail Advertising. Also prices and quantity on 6,000 national mailing lists, 99% guaranteed. Such as:

War Material Mfrs.	Wealthy Men	Fly Paper Mfrs.
Cheese Box Mfrs.	Ice Mfrs.	Foundries
Shoe Retailers	Doctors	Farmers
Auto Owners	Axle Grease Mfrs.	Fish Hook Mfrs.

Write for this valuable reference book. Also prices and samples of Fac-simile Letters.

Have us write or revise your Sales Letters.  
Ross-Gould, 1813X Olive Street, St. Louis

**Ross-Gould**  
Mailing  
Lists St. Louis

## Don't Send Your Customers to Another Garage!

If you cannot repair electric starting and lighting equipment intelligently, your customer will go elsewhere for this service. He will take the rest of his trade with him. There is more money in electrical repairs than in any other department of the garage business. The demand is enormously increasing.

# Weston

Model 280  
**GARAGE TESTING INSTRUMENT**

is the best, the most reliable and therefore the cheapest electrical equipment for you. It enables you to determine promptly and accurately the condition of the electrical equipment of any automobile, just where the trouble is and just how to remedy it.

Write for our *Special Proposition*.

**Weston Electrical Instrument Co., 30 Weston Ave., Newark, N.J.**

23 Branch Offices in the Larger Cities

## STOP DISPUTES WITH CUSTOMERS OVER REPAIR CHARGES

Charges for repairs to be just alike to car owner and garage man should be based upon time records which are accurate—not guesses of the workman.

Make all your time records with **THE CALCULAGRAPH** and convince your customers that they don't have to pay for your workman's mistakes.

Satisfied customers soon pay for the cost of a Calculagraph and place your repair department on a paying basis. Send for free Booklet W, illustrating a complete set of forms for a simple garage cost system.

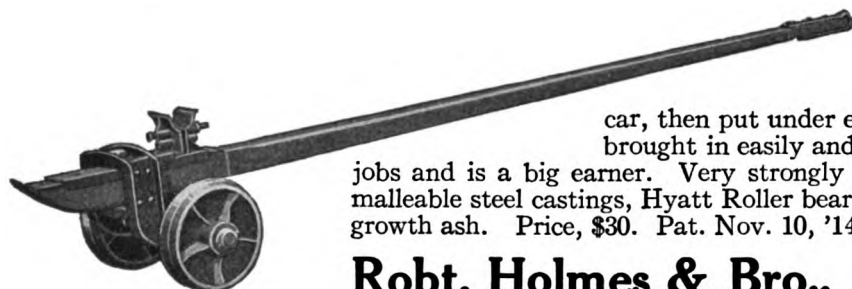
### CALCULAGRAPH COMPANY

Dept. 77, 30 Church Street

New York City



## Hundreds of Garagemen Use the Holmes Wrecking Truck



It is just what they need for bringing in wrecked cars. The truck is used as lever to raise the

car, then put under either axle and any size car can be brought in easily and quickly. Brings lots of profitable

jobs and is a big earner. Very strongly made, having frame and wheels of malleable steel castings, Hyatt Roller bearings for wheels, and tongue of second growth ash. Price, \$30. Pat. Nov. 10, '14. Discounts to dealers and garages.

**Robt. Holmes & Bro., - Danville, Ill.**

## ADVERTISING SPARK PLUG TESTER AND GASOLINE GAUGE

**YOUR NAME ON BACK OF GAUGE**

For advertising that will pay you, give your motoring customers a useful and inexpensive device. The "INSTANTO" Spark Plug Tester and Gasoline Gauge with your name and address printed on the back makes an excellent advertising novelty and costs you very little.

**THE M. A. LEVY COMPANY**  
429 So. Dearborn St. Chicago, Ill.

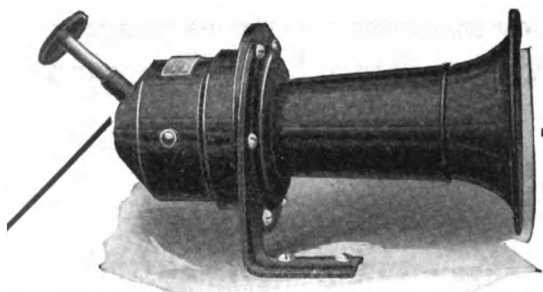
**PROGRESSIVE GARAGE**

Keeping your name before your customers in a most effective and the least expensive way is your problem. The "INSTANTO" is the answer. Sample 10 cents to cover postage.  
**WRITE TODAY FOR PRICES**

"INSTANTO"  
SPARK PLUG TESTER  
APPLY TIPS TO TERMINAL  
CAP AND BASE OF PLUG  
PATENTED - THE M. A. LEVY CO.







## The Garford Hand Horn — \$3.50

Couldn't be better if  
we charged \$100.00

It is at once the simplest and most dependable of all Warning Signals.

Note the rakish slant of the plunger, set at an angle of 45 degrees. This makes it convenient to operate.

A touch of the finger on this plunger gives you all the warning that you want instantly. The note may be modulated at will from a loud, far-flung call to a short, snappy signal to clear the road.

Remember there are no batteries, nothing complicated in construction and nothing to get out of order.

*We have a splendid proposition for dealers.  
Write for terms.*

**The Garford Manufacturing Co.**  
ELYRIA, OHIO

## Jobs Await Skilled Mechanics in Detroit Factories

¶ Come to Detroit—Five Dollar a Day Jobs waiting for skilled mechanics.

¶ We teach you the business in 100 hours—a new and practical system.

¶ Endorsed by all of the leading automobile factories.

*Terms to deserving applicants      Get particulars*

**Machinist Training School**  
140 East Fort St. :: DETROIT, MICH.



## Edison

Alkaline  
Lighting  
and  
Ignition  
Batteries

*Batteries and Supplies  
carried in Stock at our*

## Service Station

Every Garage Owner should have information  
about the Edison Battery on his desk.

Write us.

**EDISON STORAGE BATTERY CO.**  
Orange, N. J.

Chicago Address: 2025 Michigan Avenue

## Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.

They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.  
Main Office, Leavitt St. and Jackson Blvd.

**Pondelick Brothers,** CHICAGO ILLINOIS

# FORDOWNERS

are searching for a reliable device that will improve their lighting system.

## Bright Lights for Ford Cars at All Speeds

## DEALERS

Here is your chance to serve them in the most efficient manner. The Aske Regulator designed for a 1915 and later model Ford Cars providing bright lights at all speeds and it is the only device of its nature on the market that is patented and guaranteed to continue the operation of ONE light, WITHOUT INCREASED



VOLTAGE, should one lamp burn out.

### Thousands of Satisfied Users

Jobbers and dealers should add this to their line.

**ASKE AUTOMATIC VOLTAGE REGULATOR CO.**

307 Providence Bldg., Duluth, Minn.

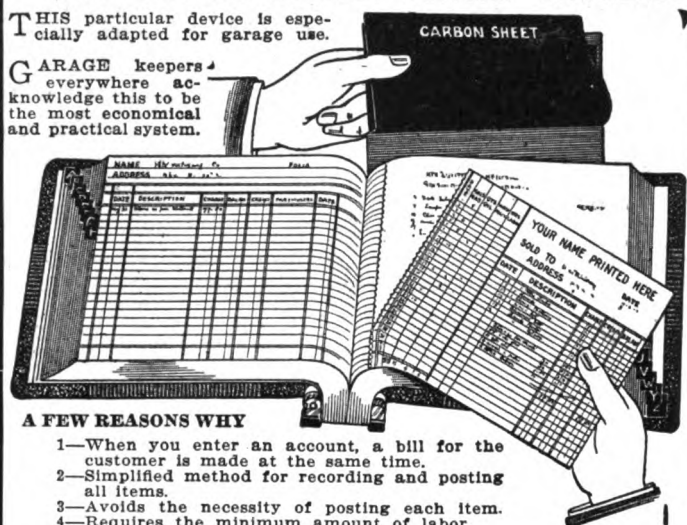
*Write for prices and illustrated booklet*

# SAVE TIME AND MONEY

Our SPECIAL GARAGE Bookkeeping Plan Gives You the HIGHEST Possible EFFICIENCY

THIS particular device is especially adapted for garage use.

Garage keepers everywhere acknowledge this to be the most economical and practical system.



### A FEW REASONS WHY

- 1—When you enter an account, a bill for the customer is made at the same time.
- 2—Simplified method for recording and posting all items.
- 3—Avoids the necessity of posting each item.
- 4—Requires the minimum amount of labor.

This page is the customer's bill; the one underneath is your copy.

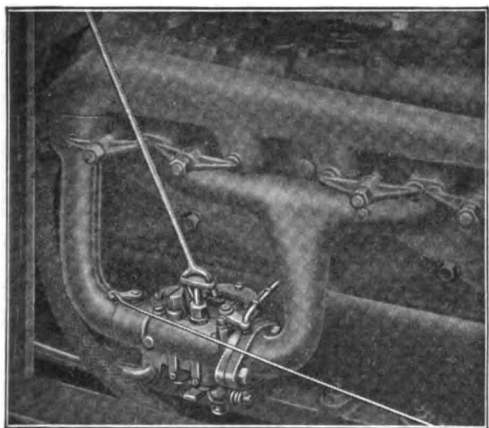
Harton's Garage and Accounting Record is another new labor saving device we make. Ask about it.

SEND FOR DESCRIPTIVE FOLDER AND FULL PARTICULARS

**THOMAS J. HARTON & CO., Inc.,** 212x Church St. NEW YORK  
*Loose Leaf Specialties*

# Model N Marvel Carburetor

Designed especially for Ford Cars. Fits right in place of regular installation, no changes whatsoever.



Model E Marvel Carburetors are standard on Buick, Olds, and Oakland.

Model E Marvel Carburetors greatly improve Overland and Studebaker cars. Catalog on application.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retail for \$8.00 complete.

**MARVEL CARBURETOR COMPANY**  
FLINT, MICHIGAN, U. S. A.

# GREATER PROFITS From Your Repair Department

and absolute satisfaction to your customer if you base your charges on actual time consumed and can submit records as evidence—no embarrassing errors or disputes.



Price \$8.00

Guaranteed

Your repair department automatically increases its efficiency and your profits by using the

## New Improved Cosmo Time Stamp

It records accurately date, hour and minute each job is started and finished—speeds up the entire shop—permits no "loafing on the job."

**Special—10 Days' Trial Coupon—Mail today**

**A. D. JOSLIN MFG. CO., 225 W. Erie St., Chicago.**  
Please send me Cosmo Time Stamp on 10 days' trial. At end of 10 days I will remit the price, \$8.00 or return the Time Stamp.

Name .....

Address .....

Durable  
Accurate  
Reliable  
—  
Prices  
Reasonable



## Be "Time Wise" and positively know the cost of every Automobile repair job and check your workmen's time

By the use of the **Automatic Time Stamp**, a thoroughly practical and comparatively inexpensive mechanical Time Cost Keeping System may be installed which will give a correct, indisputable and automatic printed record of the exact time consumed or occupied in doing any job or piece of work.

A great many service stations use one or more of these machines and no automobile man can afford to carry on business without at least one **Automatic Time Stamp**.

We guarantee that its use will save time, money and annoyance, eliminate losses and increase profits.

**Descriptive Printed Matter and Sample Time Cost tickets free on application.**

### THE AUTOMATIC TIME STAMP CO.

Automobile Dept., 161 Congress Street, Boston, Mass.

Established 1880

*Originators of the Art of Printing Time Automatically*

Also, Makers of the Automatic Time Register, the Duragraph (Elapsed Time Recorder), and Time Recording and Computing Machines for all divisions of time and for all purposes.

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—bale it and get good prices—reduce fire dangers.

### Baling Presses From \$12.50 Up

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Are turned from the best **Solid Bar Stock** and are **Heat Treated**. For

### STRENGTH and RELIABILITY

They are unexcelled. Ask for dealer's discount.

Price  
**\$1.00**



**Graham Roller Bearing Co., Coudersport, Pa.**



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Put Energy In  
Your ENGINE

If your car eats up fuel and oil, lags on the level, crawls up hills and fails to live up to rated horse-power, blame it on poor piston rings.

K-P Rings are the remedy. All the joints are evenly distributed and blocked. The Tongue and Groove Side-lock, a K-P Patent, prevents scoring of cylinders, holds the ring in proper position and prevents carbon pockets. Send for free booklet, "Economy and Power".

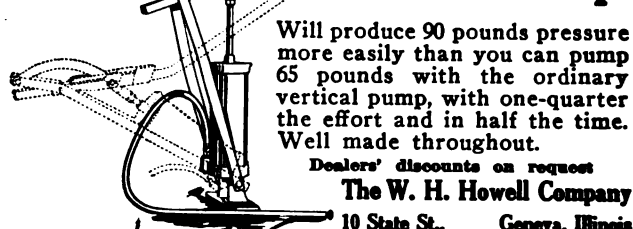
K-P Rings are sold by all up-to-date dealers and jobbers.  
**KEYS PISTON RING CO. 3008 Olive St., St. Louis, Mo.**

Tell your customers  
not to break their  
backs pumping tires.

**\$500**

Jensen

## Tire Pump

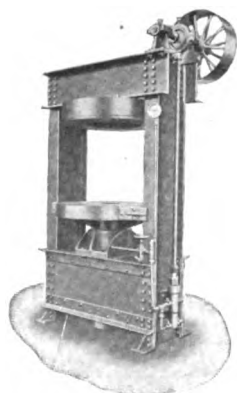


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Dealers' discounts on request

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## Hydraulic Arbor Presses

work easier  
than any  
others.

We make  
many sizes  
for many  
purposes.



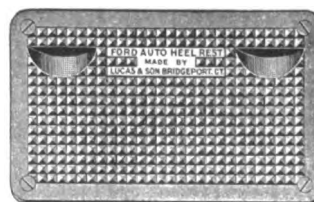
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**Lourie Manufacturing Co.**  
SPRINGFIELD, ILL.

Tire Applying Press

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A GREAT CONVENIENCE TO MOTORISTS



Locates the heel for both clutch and brake pedals—gives the feet a comfortable resting place—protects the rubber mat.

Made of frosted aluminum. Will not flatten, wear through or tarnish.

A neat, useful footrest all car owners will appreciate. We also make the Auto Heel Rest used extensively in other cars.

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Scaife Copper-Brazed Tanks will hold air indefinitely without loss of pressure.

Copper-Brazed Tanks are made only by our company.

*Beware of Imitations!*

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will regrind all sizes of motorcycle and automobile cylinders. This grinder will fit on any ordinary engine lathe.

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## WALL'S CYLINDERREBORING and PISTON SERVICE

Twenty years' experience of high class automobile work of our President, Mr. Wall, enables us to render an expert service in auto machine work of all classes. Every job has Mr. Wall's personal supervision—every mechanic an expert.

Prompt Service  
Reasonable Charges

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Use UNITED Flexible Metal Lined GASOLINE HOSE and UNITED Flexible Metal Lined AIR HOSE and bring your station up to the ACME in EQUIPMENT. UNITED Flexible Metal Lined GASOLINE HOSE has been approved by The Board of Fire Underwriters. The largest Oil Companies, Garages and Filling Stations in the country are using our Gasoline Hose. We manufacture our hose in all sizes and attach couplings to fit any make of pump. Send us your requisitions and let us supply you with THE HOSE of the LONGEST SERVICE.

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**MP PISTON RINGS**

**For Every Car**

YOU need only one kind of piston-ring in stock—the M-P. One-piece; concentric; leak proof. Made of close-grained grey iron, accurate to one one-thousandth of an inch. Simple lock-joint never leaks compression.

**STOCK M-P  
PISTON - RINGS**

and watch your customers register satisfaction. Write today for dealer's terms.

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## PACO The ORIGINAL RACING BODY for FORDS

The designers and manufacturers of PACO Racing bodies have had one aim in view ever since they first appeared on the market; to build a racing body that will give to a Ford all of the class and distinction possible and at the same time withstand the wear that such a body will receive.

### PRICES

Model 21, \$146.00  
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Design patented  
Jan. 23, 1917

**OUR 1917 IMPROVEMENTS** have made the bodies more attractive, more easily mounted, easier to drive and more durable. Let us send you our new descriptive literature. Get your PACO in time to get a full season's use out of it during 1917.

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Announcing  
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PISTON RING

Unquestionably the simplest, most accurate and efficient piston ring on the market. A One-Piece, High - Compression Ring. Dealers, get busy and secure the profitable agency for the Seal-Tite Ring which will assure "more" power, perfect compression and lubrication. Sample and Descriptive Literature upon request.

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*Instantly attached without tools or adjustments.*

Now ready for Briscoe, Dodge, Chandler, Hudson, Overland, Reo, Stearns, Saxon 1916 and Studebaker. On and off in a jiffy. Not a rubber diaphragm device. Write for details.

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**DETROIT ACCESSORIES CORP'N**

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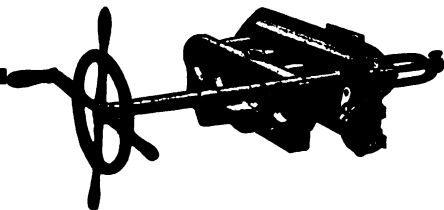


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Acts instantly and permanently. Highly endorsed by garagemen, repairmen and users. Try it at our expense.

*Write for agency particulars and sample package.*

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### The Heiser Improved Cylinder Reborer Tool will put "PEP" into your work

New improvements make it far more efficient. The time of operation has been reduced one-half; and is the only reborer tool that is self-sharpening. The only tool (except expensive grinders) that will not leave the finished cylinder slightly tapered toward the bottom. The only tool which rebore between centers—this insures finished cylinders square with the crank shaft, round, straight, and true.

The Heiser Improved Cylinder Reborer Tool makes good shops out of poor ones and better ones out of good ones. Descriptive literature on request.

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## AUTO TOPS FOR ALL CARS

ESTABLISHED  
33 YEARS



**FORD ONE MAN TOPS**  
Seat Covers for All Cars  
Top Coverings for Any Car  
Tops Made to Fit Any Car

**WE CAN SAVE YOU MONEY**

**BUOB & SCHEU**

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ONE MAN TOPS  
FORD TOPS  
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## "Hercules" Guarantee Welding and Brazing

Of all metals—aluminum a specialty. Superior machinists. Fine Piston castings.

### CYLINDERS REBORED

New Pistons and Rings furnished. We sell Piston Castings. We manufacture Acetylene Welding and Cutting Apparatus and Carbon-Removing Apparatus. Send on your work—our prices are right—or write.

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Each Delion dealer gets *all* the Delion trade in a definitely-named territory. This holds good *permanently*. And he gets the profits he *should* have in tires. Investigate.

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Main Office: 1922 Broadway, New York

Chicago Office: 3449 Michigan Ave., Chicago

THE DAVIS  
CYLINDER  
REBORING  
JIG AND  
REAMER

## Money Making Machines for Every Shop

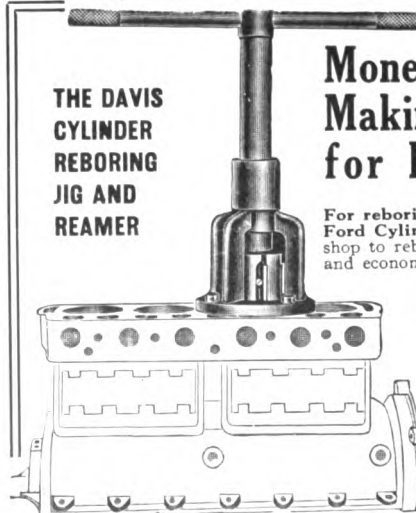
For reboring old worn and scored Ford Cylinders. Enables the small shop to rebore cylinders as efficiently and economically as the largest shops.

Makes the Ford Motor like new. Reboring Ford Cylinders is a profitable business in any section.

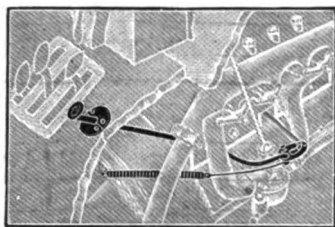
Also manufacturers of the Davis Milling Attachment and Air Compressor.

Write for Particulars.

**THE HINCKLEY  
MACHINEWORKS**  
HINCKLEY, ILL.



## Ewald Foot Accelerator Gets the Ford under full speed



almost instantly and leaves the driver's hands free to operate the steering wheel, horn or brakes. It increases the mileage per gallon by not racing the engine. It pays for itself quickly on any Ford car.

Neat in appearance and made of the best materials.

A sure winner for the trade.

Write today for dealers' proposition

**EWALD NOVELTY WORKS, Oakfield, Wis.**

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furnish efficient protection for cars in dead storage. They are made of strong, heavy paper, properly reinforced, and in standard sizes to fit any car.

Made only by

**The Kennedy Car Liner & Bag Co.**  
SHELBYVILLE, IND.

**MORE** { Power  
Speed  
**LESS** { Noise  
Gasoline  
Oil  
Carbon  
Trouble

If we regrind your cylinders and fit new pistons, we furnish our Oiltight Rings at no additional cost.

Write — West 2460  
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**GEO. H. BLETTNER**

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**Will Run 5,000 Miles and More**

These tires are of double thickness and have 12 plies of fabric; therefore no punctures, no blow-outs. They are rebuilt by our special process, vulcanized and double treaded.

30x3 ..\$4.50	32x3½..\$5.75	34x4....\$7.75
30x3½.. 5.50	33x4 .. 7.50	36x4.... 9.00

Other sizes in proportion. Write for prices today. Send \$1 deposit for each tire ordered, and we will send the tire, balance C. O. D., subject to your examination and approval before paying for same.

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The growth of demand for the Truckmobile—far surpassing our most hopeful expectations—has been so great that the output of the **\$350.00** Truckmobile has not only been doubled but redoubled. This and a Ford Chassis, old or new, great demand by dealers all over the country has definitely stamped the Truckmobile.

**Biggest of them all!**

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**"The Car of the Hour"**

**5-Passenger  
Touring**

**\$985**

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**"A Millionaire's Value at a Popular Price"**

**Distinction Endurance  
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### Disco Moves Into New Factory

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## DEALERS MAKE MONEY!

Get the Agency for the "Tonford" truck unit,—one of the quickest selling propositions you ever tackled. Attached to a Ford chassis, makes a one-ton truck. Light, strong, economical, easily handled. Drygoods merchants, furniture dealers, retailers in almost every line, bottlers, farmers, creameries, all want it. Find it best possible buy.

**\$325** **Tonford** **\$325**  
TRADE MARK

All the facts that sell the Ford, sell the Tonford. Highest grade truck attachment made—easiest to attach—strongest, most durable. Best constructed truck unit on market—lowest priced. Get busy now, while territory is still open. Write today. Learn how "Tonford" dealers pile up profits.

**DETROIT TRUCK CO., Mfrs., Detroit**

# The Garage *and* Shop Market Place

**Buy Where You  
Can Buy the Best  
Save 50% on Parts**

## OUR GUARANTEE

1. Quickest Possible SERVICE
2. Only Good Serviceable Parts
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For Standard Makes & Orphan Cars  
Including Buick, Maxwell, Overland,  
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Special Bargains in Complete Engines,  
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**New Piston Rings, 30c Each**

Any Size or Over Size

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## Repairs

Parts for most any make car  
We save you 50 to 75%

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We carry large stock  
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All Engines guaranteed in good shape

## Rear Axles

Semi, Three-quarter, Full Floating  
\$25.00 to \$50.00

Money refunded if goods are not  
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Write us what you need

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We Tear 'Em Up and Sell the Pieces  
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ON ALL STARTING, LIGHTING  
AND IGNITION APPARATUS—  
THE WAY YOU WANT IT DONE  
**ELECTRICAL TESTING CO.**  
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## Automobile Cylinders

**REBORED AND GROUND**

PROMPT, EFFICIENT SERVICE.  
PRICES MODERATE.

**STERLING ENGINE CO.**  
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Get Our Net Price List on

**CYLINDER REGRINDING  
PISTONS, PINS and RINGS**

We Satisfy Indianapolis  
Car-Builders

## BUTLER MFG. CO.

Established 1897

Both Phones Indianapolis, Ind.

## Cylinder Grinding

with new Pistons and Rings fitted  
\$8 each. Finest work and guaran-  
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**WE ALSO MANUFACTURE  
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adapted to fit on any standard  
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Fitted with Oversized Pistons and Rings

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Everready Automatic Engine Starter. General  
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Welding of all metals. Manufacturer Catelain  
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**\$5.00**

Buys my formula for making  
body polish which agents and  
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A big opportunity for ga-  
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## THE BRICKEY AUTO HEATER

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## AUTO SPECIALTIES

The Brickey Auto Heater will keep  
a car at parlor temperature in win-  
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thing to use are—

### Simplicity

Is the simplest device conceivable  
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for the front and rear heaters, re-  
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Either heater will send a continu-  
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NOT only a few but *all* the old and new  
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Price refunded if not satisfactory. Send  
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We do welding and machine work of all metals.  
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All Sizes \$12.00 Upwards

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Any broken Speedometer Shaft re-  
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Write for illustrated circular.

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**ROYAL**—the typewriter of triple service. It writes, types cards and bills. Send for catalog describing adjustable touch and many other exclusive Royal features.

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## TRUNKS FOR AUTOS

THIS MEANS THE  
**KAMLEE COMPANY**  
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Trunks for all makes of cars and for all purposes  
Dust-Proof, Rain-Proof, Strong, Light, Convenient, Handsome  
Liberal Profits for Garagemen and Dealers. Send for our proposition

## GARDEN CITY SPRING WORKS

Manufacturers of

## AUTOMOBILE SPRINGS

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By specializing, we make ridiculous-ly low prices on reboring cylinders.

Our prices include new light weight semi-steel pistons and rings. Work neatly and promptly done and absolutely guaranteed.

PRICES QUOTED

Buick Model No. 10, \$20.00

Write for Particulars

**ALLEN & CURTISS CO.**  
BENTON HARBOR, MICH.



## RIVES' AUTO-PEDAL NEVERSLIP PADS

Make Driving more comfortable and prevent feet from slipping.

Full Set \$1.00

ATTACHED TO ANY CAR IN A MINUTE.

Close dealer co-operation insures quick sales. Write for proposition.

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Underwoods, Oliverts, L.C. Smith, Remington, Smith Premier and other makes  
\$30.00 \$25.00 \$27.00 \$15.50 \$18.50 \$15.00 and up  
Expert repairing and rebuilding. Every machine in perfect condition and guaranteed 5 years. Write for our liberal free trial offer and cut rates prices.

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Seat Covers. One-Man Top.

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"DON'T SCRAP ALUMINUM PARTS."

SAVE them with SO-LUMINUM, new, great welding compound; ¼ time and cost of acetylene. No flux—use gasoline torch.

Trial Bar With Full Directions, 50c.  
Booklet 8

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 Aske Automatic Voltage Regulator Co., Duluth, Minn.  
 The M. W. Dunton Co., Providence, R. I. (Radiator Cure.)  
 Service Motor Supply Co., 1523-31 Michigan Blvd., Chicago, Ill. (Complete Line.)  
 Thurston Auto Supply Co., 3020 Michigan Ave., Chicago, Ill.  
 United Specialties Co., Cincinnati, Ohio.  
 I. Wolf Auto Parts & Tire Co., 619 N. Illinois St., Indianapolis, Ind.

## AIR COMPRESSORS

The F. W. Spacke Machine Co., Indianapolis, Ind.

## AIR GAUGES

Twitchell Gauge Co., 200 Michigan Ave., Chicago.

## AIR TANKS

Wm. B. Scaife & Sons Co., Pittsburgh, Pa.

## AUTOMOBILES

Elgin Motor Car Corporation, Chicago.

## AUTOMOBILE AXLES

Russel Motor Axle Co. (Internal Gear Axle), North Detroit, Mich.

## AUTOMOBILE HEATERS

Thurston Auto Supply Mfg. Co., 3020 Michigan Ave., Chicago, Ill. (Brickley Auto Heater.)

## AUTOMOBILE HEEL RESTS

J. L. Lucas & Son, Bridgeport, Conn.

## AUTO TIRES

Amazon Rubber Co., Akron, Ohio.  
 The B. F. Goodrich Co., Akron, Ohio.  
 Deillon Tire & Rubber Co., Inc., 1922 Broadway, New York City.  
 Chicago Double Tread Co., 1235 S. Wabash Ave., Chicago, Ill.

## AUTOMOBILE TOP HOLDER

Rock Island Mfg. Co., Rock Island, Ill. (Adams Auto Top Holder.)

## AUTO LOCKS

Perry Auto Lock Co., 1238 Michigan Ave., Chicago.

## AUTO TOPS

Buob & Scheu, 216-220 Webster St., Cincinnati, O.  
 Auto Cape Top Co., 2338 Michigan Ave., Chicago.

## AUTOMOBILE TOURING COTS

Peoria Auto-Kot Co., Peoria, Ill.

## BALING PRESSES

Chicago Baling Press Co., Chicago, Ill.

## BALL AND ROLLER BEARINGS

The Norma Company of America, 1790 Broadway, New York City.  
 Pruyn Ball Bearing Works, 1919 Michigan Ave., Chicago.

## BATTERIES

American Battery Co., 1120 Fulton St., Chicago.  
 The Cleveland Battery & Electric Co., Cleveland, Ohio.  
 Detroit Battery Co., Detroit, Mich.  
 Permalite Corporation, Indianapolis. (Storage Batteries.)  
 Edison Storage Battery Co., Orange, N. J.

## BATTERY CHARGING OUTFITS

Main Electric Mfg. Co., Pittsburgh, Pa.  
 Ellington Electric Co., Quincy, Ill.

## BODIES

Paco Mfg. Co. ("Fasco" racing bodies for Ford cars), Peoria, Ill.  
 Millsapugh & Irish (Ford Coupes or Ford Sedans), 212 W. McCarty St., Indianapolis, Ind.

## BOOKS

American Technical Society, 58th and Drexel Ave., Chicago.

## BRAKE LINING

Staybestos Mfg. Co., 5518 Lena St., Germantown, Philadelphia.

## BUMPERS

American Brass Foundry Co., Milwaukee, Wis.

## CABINETS

American Bolt & Screw Case Co., Dayton, Ohio.

## CALCULAGRAPHS

Calculagraph Co., 1477 Jewelers Bldg., New York City.

## CARBON REMOVERS

Adams & Eiting Co., 716-26 Washington Blvd., Chicago.  
 Car-Gas Co., 210 Fourth Ave., Pittsburgh, Pa.

## CARBURETORS

Marvel Carburetor Co., Flint, Mich.

## COLLECTION SYSTEMS

Sayers Cabinet Mfg. Co., 20 E. Jackson Blvd., Chicago.

## COMMERCIAL VEHICLE

Chicago Pneumatic Tool Co., 343 S. Dearborn St., Chicago, Ill. (Little Giant.)  
 Dearborn Motor Truck Co., Chicago, Ill.  
 Commercial Truckmobile Co., 1606 Michigan Blvd., Chicago, Ill.  
 Detroit Truck Co., Detroit, Mich.  
 Smith Form-a-Truck Co., 1470 Michigan Ave., Chicago, Ill.

## COVERS

Auto Cape Top Co., 2334 Michigan Ave., Chicago.  
 Kennedy Car Liner & Bag Co., Shelbyville, Ind.

## CREEPERS

Gray-Heath Co., 1440 Michigan Ave., Chicago.

## CYLINDER REBORING

Allen & Curtis Co., Mishawaka, Ind.  
 Butler Mfg. Co., Indianapolis, Ind.  
 Geo. H. Blettner, 216 S. Oakley Blvd., Chicago.  
 Wall Machine & Mfg. Co., 4513 Lincoln Ave., Chicago.  
 Hercules Welding & Machine Co., 223 N. 16th St., Philadelphia, Pa.  
 Marvel Machinery Co., Boston Block, Minneapolis, Minn.  
 Sterling Engine Co., 331 S. Clinton Ave., Chicago.

## CYLINDER REBORING MACHINES

The Hinckley Machine Works, Hinckley, Ill.  
 Marvel Machinery Co., Minneapolis, Minn.  
 Wood & Safford Machine Works, Great Falls, Mont.

## DEMOUNTABLE WHEELS

Holland Demountable Wheel Co., Holland, Mich.

## ELECTRIC STARTING SYSTEMS

Disco Electric Starter Corp., Detroit, Mich.

## ENGINES

H. Robertson, 1255 N. Clark St., Chicago.

## FUEL ECONOMIZERS

Willard Company, South Bend, Ind.

## GARAGE BOOKKEEPING SYSTEMS

Thomas J. Harton & Co., Inc., 212 Church St., New York.

## GASOLINE STORAGE AND PUMPING SYSTEMS

The American Oil Pump & Tank Co., Cincinnati, Ohio.  
 Wm. B. Scaife & Sons Co., Pittsburgh, Pa.

## GASOLINE TANKS

The American Oil Pump & Tank Co., Cincinnati, Ohio.

## GASOLINE TESTERS

M. A. Levy Co., Chicago.

## GEARS

William Ganschow Co., 1002 W. Washington St., Chicago.

## HEATERS

Willard Company, South Bend, Ind.  
 Garford Mfg. Co., Elyria, Ohio.

## HOSE-TUBING

United Metal Hose Co., New York, N. Y.

## HYDRAULIC PRESSES

Louise Mfg. Co., Springfield, Ill.

## IGNITION

Imperial Brass Mfg. Co., 529 S. Racine Ave., Chicago, Ill. (Imperial Primer.)

## LATHES

Marvel Machinery Co., Boston Block, Minneapolis, Minn.  
 South Bend Lathe Works, South Bend, Ind.

## LENSES

Osgood Lens & Supply Co., 1241 Milwaukee Ave., Chicago.

## LIGHTING SYSTEMS

General Gas-Electric Co., Hanover, Pa.

## LUBRICANTS AND OILS

New York Lubricating Oil Co., New York City.  
 Standard Oil Co. (Indiana), Chicago, Ill.

## MAGNETOS

I. Wolf Auto Parts & Tire Co. (Bosch), 619 N. Illinois St., Indianapolis, Ind. (Used Bosch Magnets.)

## NUT LOCKS

Spring Nut Lock Co., 643 Transportation Bldg., Chicago.

## PAPER PRESSES

Chicago Baling Press Co., 305 S. La Salle St., Chicago.

## PEDAL PADS

Geo. H. Rives Mfg. Co., Woolworth Bldg., New York City.

## PISTON RINGS

Detroit Piston Ring Co., Detroit, Mich.  
 Ever-Tight Piston Ring Co., 1431 Chestnut St., St. Louis.  
 Keys Piston Ring Co., 3008 Olive St., St. Louis.  
 The Metal Products Co., St. Louis, Mo.  
 Butler Mfg. Co., Indianapolis, Ind.  
 Inland Machine Works, 817 Mount St., St. Louis.  
 Pondelick Bros., Leavitt St. and Jackson Blvd., Chicago.

## PUBLISHERS OF TECHNICAL BOOKS

American Technical Society, 58th St. and Drexel Ave., Chicago.

## PUMPS

Detroit Accessories Corporation, Detroit, Mich.  
 The W. H. Howell Co., 10 State St., Geneva, Ill. (Jensen Tire Pump.)  
 Danvers Specialty Co., Danvers, Ill.

## SEARCHLIGHTS

Aske Automatic Voltage Regulator Co., Duluth, Minn.

## SHIMS

Laminated Shim Co., 531 Canal St., New York

## SHOCK ABSORBERS

Auto Device Sales Co., Plymouth, Ind.  
 Phillip H. Webber & Co., Hoopeston, Ill. (W. & C.)  
 Hanard Sales Co., 86 Michigan St., Milwaukee.

## SIGNS

Commonwealth Edison Co., 72 W. Adams St., Chicago, Ill. (Federal Electric Signs.)  
 Flexlume Sign Co., 1450 Niagara St., Buffalo, N. Y.  
 Daves Electric Sign Mfg. Co., Pittsburgh, Pa.

## SOLDERING FLUX

M. W. Dunton Company, Providence, R. I.

## SPARK PLUGS

Benford Mfg. Co., Mt. Vernon, N. Y.  
 Hilborn Company, Inc., 531 Canal St., New York City (The Answer Spark Plug).  
 Twin Fire Spark Plug Co., 658 Woodward Ave., Detroit.

## SPARK PLUG TESTER

M. A. Levy Company, Chicago.

## SPOTLIGHTS

Aske Automatic Voltage Regulator Co., Duluth, Minn.

## SPRINGS

Garden City Spring Works, 2300 Archer Ave., Chicago.  
 Higgins Spring & Axle Co., Racine, Wis.  
 The Edward F. Lyon Co., Woodward Ave. and Antoinette St., Detroit, Mich. (Self-Lubricating).  
 Tuthill Spring Co., 760 Polk St., Chicago (Tuthill Lubricated Titanic Springs).

## STARTING SYSTEMS

Disco Electric Starter Corporation, Detroit, Mich.  
 H. B. Weber & Co., 1336 Michigan Ave., Chicago.

## STORAGE OUTFITS

American Oil Pump & Tank Co., Cincinnati, Ohio.  
 Wm. B. Scaife & Sons Co., Pittsburgh, Pa.  
 Shotwell Pump & Tank Co., Indianapolis, Ind.

## TESTING INSTRUMENTS

A. D. Perkins, 1777 Broadway, New York City.  
 Weston Electrical Instrument Company, Newark, N. J.

## TIME STAMPS

Beird Equipment Co., 324 W. Ohio St., Chicago.  
 Calculagraph Co., New York.  
 A. D. Joslin Mfg. Co., 226 W. Erie St., Chicago.

## TIRE REPAIR EQUIPMENT

Haywood Tire & Equipment Co., 650 Capitol Ave., Indianapolis.

## TIRE PUMPS

Imperial Brass Mfg. Co., 529 S. Racine Ave., Chicago (Wilson Hand Tire Pumps).

## TRACTORS

Parrett Tractor Co., 429 Fisher Bldg., Chicago.

## TRUCK UNITS

Commercial Truckmobile Co., 1606 Michigan Blvd., Chicago.  
 Smith Form-a-Truck Co., 1470 Michigan Blvd., Chicago.  
 Detroit Truck Co., Detroit, Mich.

## TRUNKS

Kamlee Co., 440 E. Water St., Milwaukee, Wis.

## TYPEWRITERS

All-Makes Typewriter Exchange, 162 N. Dearborn St., Chicago.  
 Royal Typewriter Co., 364 Broadway, New York City.

## VALVES

A. Schrader's Son, Inc., 783-793 Atlantic Ave., Brooklyn, N. Y. (Automatic Inflating Valve).  
 Romort Mfg. Co., Seattle, Wash.

## VARNISHES

Valentine & Company, New York, Chicago, Boston.

## VULCANIZERS

Vanderpool Vulcanizing Co., Springfield, Ohio.

## WELDING APPARATUS

Hercules Welding & Machine Co., 223 N. 16th St., Philadelphia, Pa. (Acetylene Welding and Cutting Apparatus).  
 So-Luminum Mfg. Co., 1790 Broadway, New York City.

## WRECKING TRUCKS

Robt. Holmes & Bro., Danville, Ill.

## WRENCHES

The Graham Roller Bearing Co., Coudersport, Pa. ("Curko" Socket Wrenches).  
 Walden-Worcester, Inc., Worcester, Mass.

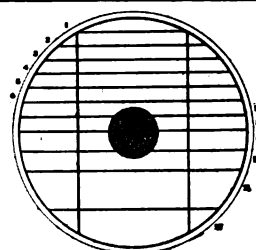
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Road Rays

NOT

"Sky" Rays



Direct Rays

NOT

"Glare" Rays

## 74% MORE LIGHT ON THE ROAD

The New Osgood Lens (Cravath Long Distance Type) throws a waist-high beam of light one-third of a mile. Twelve shafts of light that stream as one. Write for interesting sales proposition.

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THE NEW  
**OSGOOD LENS**  
CRAVATH LONG DISTANCE TYPE

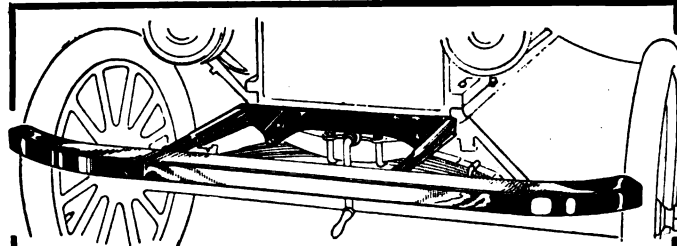
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KEEP YOUR REPAIR PARTS, SUCH AS BOLTS, SCREWS, COTTER PINS, BALL BEARINGS, ETC., WHERE YOU CAN FIND THEM INSTANTLY, AND WHERE THEY WILL BE PROTECTED FROM DUST, RUST, ETC., IN A REVOLVING CASE MADE IN MANY SIZES, OF HIGH GRADE MATERIAL.

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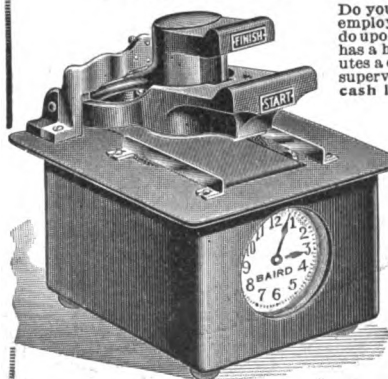
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Can't be beat for rigidity, simplicity and ease of attachment. Will stay put.

**AMERICAN BRASS FOUNDRY CO.**

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Do you keep as careful a check on how your employees spend their valuable time as you do upon your cash? WHY NOT? Their time has a high cash value to you. A few minutes a day lost through lack of automatic supervision soon adds up into a heavy cash loss.

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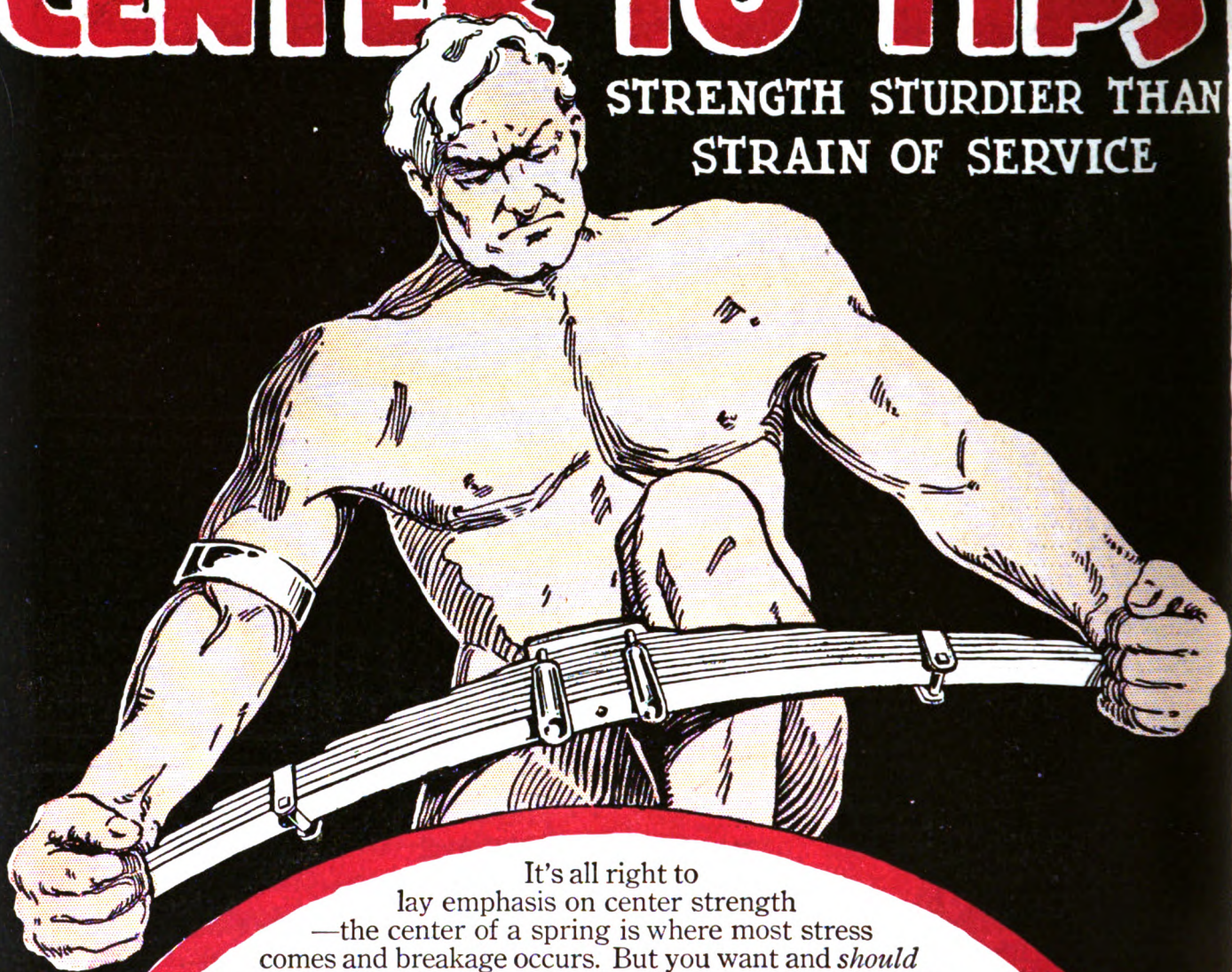
**BAIRD EQUIPMENT CO.**

324 W. Ohio St., Chicago  
Phone Superior 2071



# CENTER TO TIPS

STRENGTH STURDIER THAN  
STRAIN OF SERVICE



It's all right to  
lay emphasis on center strength  
—the center of a spring is where most stress  
comes and breakage occurs. But you want and *should*  
*have strength from center to tips* that is sturdier than the  
strain of service. You get this in

## **HIGGINS QUALITY SPRINGS** FOR REPLACEMENT

There's no risk of ordinary breakage at center. The nib construction has surmounted that. It has eliminated holes—bolts—humps—and with them the fear of accident. Higgins Quality Springs have *demonstrated* themselves superior in center construction. And there's no more chance of breakage at *any* point than at the center, where Higgins Quality Springs stand unrivalled in resistance. Made only from the highest class motor car spring steel of a special analysis—scientifically heat-treated—properly constructed and critically tested, before shipping. Equipped with rebound clips. Leaves are thoroughly lubricated with high grade spring leaf lubricant—preventing rust and squeaks, insuring easy, limber action and freedom from friction wear. Exacting care guided by a 34-year spring making experience is given every little detail—developing an unmatched degree of service strength with easiest riding resiliency.

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It is the same at all points. It is your protection against imperfection in any form. Demand that your supply house furnish you with Higgins Quality Springs. If they refuse—write us. Be sure to send for catalog listing 500 different styles—discounts and big money-making proposition. Get the best of the business with these better springs.

**Higgins Spring & Axle Co.**

Dept. 112  
Racine, Wis.



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Distinguished by its Coat of Gold

*Ten Million People are  
Reading about this Plug—*

**B**ENFORD is now spending \$150,000 in a Sales and Advertising Campaign that hammers home the Benford Golden Giant message to every motorist in the country.

All through this Spring, full pages in the SATURDAY EVENING POST and other big national publications will be keeping Benford quality, Benford spark plug success and the remarkable Benford guarantee before the motoring public.

It is sound business for you to be ready with the Spark Plug these motorists will want—the Plug you know will give them the right service.

Get your share of the new customers and sure "repeat" business that the Golden Giant is creating for many thousands of progressive dealers.

Concentrate on Golden Giant—increase your spark plug sales and profits. Hitch up to the Golden Giant's success!—it means *your* success.

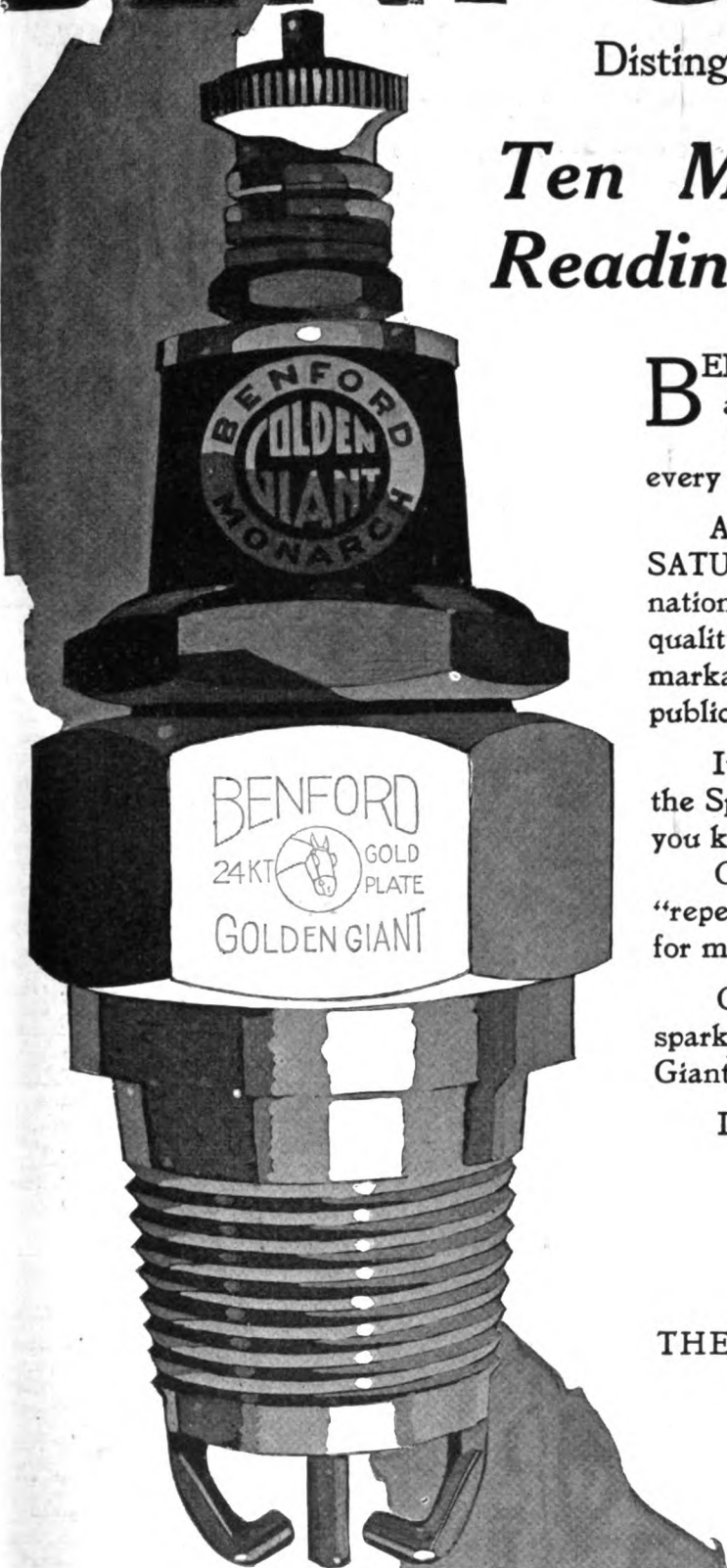
Is your stock ready?

**BENFORD MFG. CO.**

MT. VERNON, N. Y.

*"Fifteen Years of Spark Plug Success"*

**THE ARISTOCRAT OF SPARK PLUGS**



# GOLDEN GIANT





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CAGO, MARCH 15, 1917

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Three dollars a year

**AMERICAN  
MOTORIST**



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NEW CAR NUMBER



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MOTORIST, MOTOR, MOTOR LIFE—

carry full page advertisements telling your  
customers about the merits of the "Perry"  
Auto Lock. By this means we have created  
a market for more than 50,000 "Perry"  
Locks per month.

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business? If not you can blame only  
yourself. Someone is going to get these  
orders from your customers. And you  
are the man—if you carry the

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One turn of the key disconnects  
the steering wheel. Car cannot be  
driven or towed away. Insurance  
companies now allow from 15% to  
40% reduction on cars that are  
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locks that thousands of the best  
dealers now have our agency.  
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is open. Write now and find  
out—or mail the coupon if more  
convenient. We have no com-  
petition—your profits are excel-  
lent—and there is a "Perry" to  
fit every car.

**Mail the Coupon!**

**"Tell Me About It"**

Perry Auto Lock Company

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Chicago, Ill.

Gentlemen: I have read your description  
of your "Perry" Auto Lock and would like  
to know about your special proposition to  
dealers.

I sell.....cars

Name.....

Address.....

Town.....State.....

# AMERICAN GARAGE & AUTO DEALER



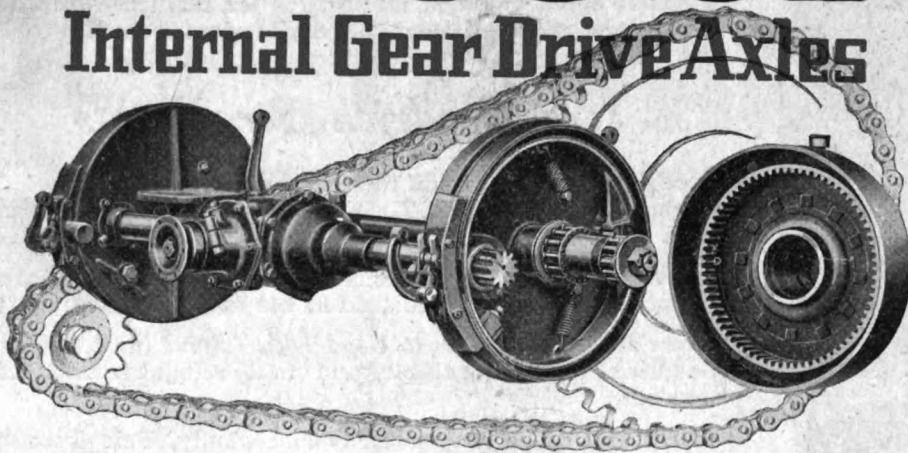
Volume 7  
Number 12

CHICAGO

MAY, 1917

\$1.00 Per  
Year

## Russel Internal Gear Drive Axles



**T**HE Russel Internal Gear Drive Axle has retained and improved all the good features of the chain drive, and has eliminated all the bad ones.

The chain drive, when new, is the most efficient drive for motor trucks. But it soon loses its efficiency, as the chains yield, wear rapidly and become noisy.

Large manufacturing experience is back of Russel design and workmanship. We have supplied more manufacturers of 1 and 2 ton trucks with jackshafts than any other axle maker.

**Russel Motor Axle Company**  
North Detroit

The Russel Load-Carrying Axle is a one-piece round bar of chrome-nickel steel





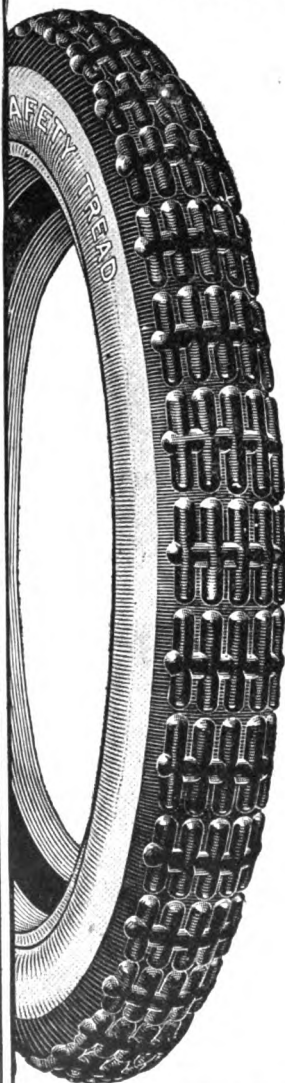
Fair List Prices



Fair Treatment

# The Buyer Himself Judges **GOODRICH**

## BLACK SAFETY TREAD TIRES



**T**HE law of *Goodrich Fair Treatment* says:  
"The buyer of a Goodrich tire must be satisfied."

That is, The B. F. Goodrich Rubber Company will not permit a patron to feel that a Goodrich tire owes him anything.

When a Goodrich Black Safety Tread tire is sent forth, it carries the pledge of Goodrich that it is free from imperfection; that it is the *best non-skid fabric tire* the largest and *most skillful* rubber manufacturer can make.

It has no equal amongst fabric tires for resilience and durability—for comfort, economy, style, freedom from tire trouble, and mileage.

### *No Goodrich Tire Debts*

Goodrich tires *must* fulfill this high service Goodrich pledges for them. When one fails, The B. F. Goodrich Rubber Company is more eager than the buyer that its shortcoming be made good.

It invites every Goodrich patron with a vestige of a grievance against a Goodrich tire to send in his grievance and the tire.

There are *no conditions* to Goodrich's "*Bring Back the Tire.*" Goodrich will not quibble, and take refuge behind "catch words."

Fairly and quickly, generously and gladly, Fair Treatment cancels any debt of a Goodrich tire.

## The B. F. Goodrich Rubber Co.

*Akron, Ohio*

Also maker of the Tires on which Dario Resta won the official 1916 Automobile Racing Championship—Silvertown Cord Tires

Where You See This Sign  
Goodrich Tires are Stocked



Ask Your Dealer for Them

### Silvertown's Domination of 1916 Auto Racing

The 1916 automobile racing season brought forth amongst a half hundred Silvertown victories the following especial triumphs of the **ONLY two-ply, cable-cord** tire:

National Automobile Racing Championship, won by Dario Resta with 4100 points. 15,582 points scored toward the championship by Silvertown to 7,176 by ALL its competitors COMBINED.

Eighty per cent. of all the prize winning positions of A. A. A. sanctioned races, including 31 Firsts to 5 Firsts by ALL its competitors.

*"Best In The Long Run"*



# AMAZON

## Stock Amazon Supertires!

*Modern tire merchandising has advanced to that point where a dealer must be constantly on the alert to connect with any new lines that will give him a lead over his competitors. This is especially important where the exclusive selling rights can be secured. You realize this.*

*Amazon Supertires are destined to dominate the tire field—advance improvements, perfect construction, choice materials, a fair price to all, and a new constructive, progressive policy are bringing Amazon Supertires to the front as no tire has been brought before.*

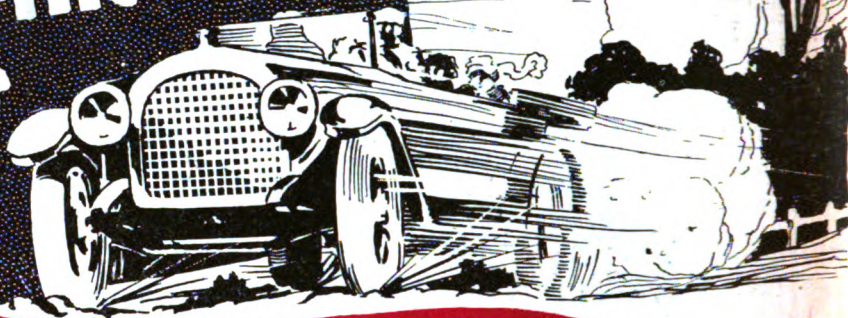
*You realize what this means—the dealer who secures the exclusive agency for the Supertire has a lead on his competitors and is entrenched against all tire competition.*

*As a dealer this should interest you. Write us today.*

THE AMAZON RUBBER COMPANY  
AKRON  
NEW YORK OFFICE  
2176 Broadway



# We've Flattened the Hump and Filled the Hole in the SPRING Question



The question of center spring construction is no longer a "stumper." We have arrived at the correct answer—and like all problems there can be but *one* right solution. Other types are errors.

The use of a bolt demands boring a hole. Metal is taken out. The spring is weakened where it should be strongest. A high average of breakage always results.

The "hump" model does strengthen the center—*stiffens it too*—depriving it of easy riding qualities. That's one objection. Here's another as serious—breakage occurs outside the malleable that holds leaves in place. Both styles are *plainly* faulty.

## Higgins Quality Springs

### FOR REPLACEMENT

are held together at center with a nib. The metal is *pressed* into a small groove. The back or nib of one groove fits into the hollow of the adjoining leaf—thus positively preventing "sliding." There are no holes. No bolts. No humps. *No breakage.* No stiff jolts from over-stubborn resistance. There's strength *a'plenty* to take ample care of heavy haulage over bumpiest roads—and *also* resiliency that relieves machine and motorist of all shock. You get endurance *combined* with the limit of riding comfort.

Ready for immediate installation. Made exclusively from highest grade motor car spring steel, of special analysis. Scientifically heat-treated. Tested for elasticity, tensile strength and anti-fatigue properties before shipping. No "weaklings" ever get by. Leaves thoroughly lubricated with water-proof, rust-proof, anti-friction lubricant. No squeaks. No mussy oiling.

Ask your repair or garage man to supply you. Enjoy greatest riding ease. Protect your car from racking jolts—and yourself from possible accident.

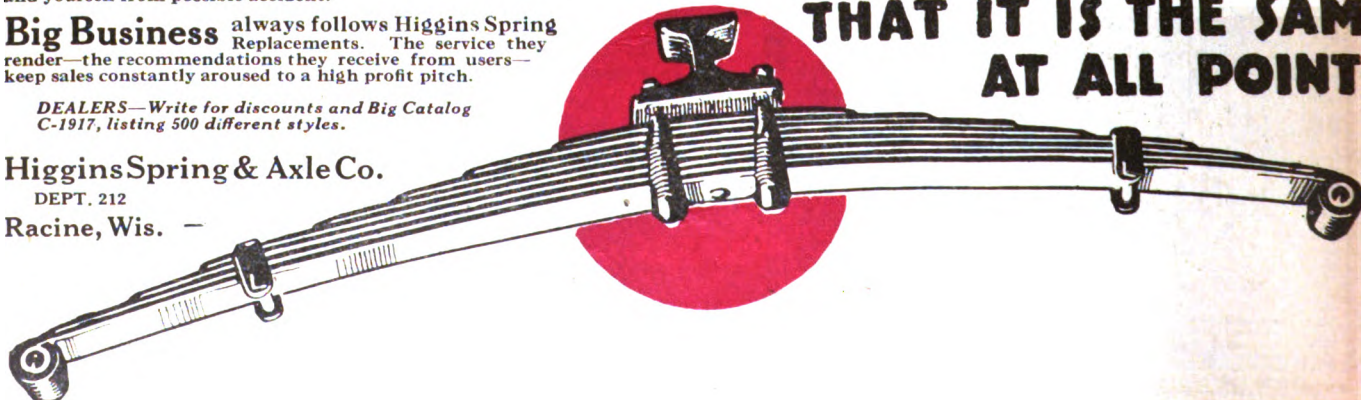
**Big Business** always follows Higgins Spring Replacements. The service they render—the recommendations they receive from users—keep sales constantly aroused to a high profit pitch.

**DEALERS**—Write for discounts and Big Catalog C-1917, listing 500 different styles.

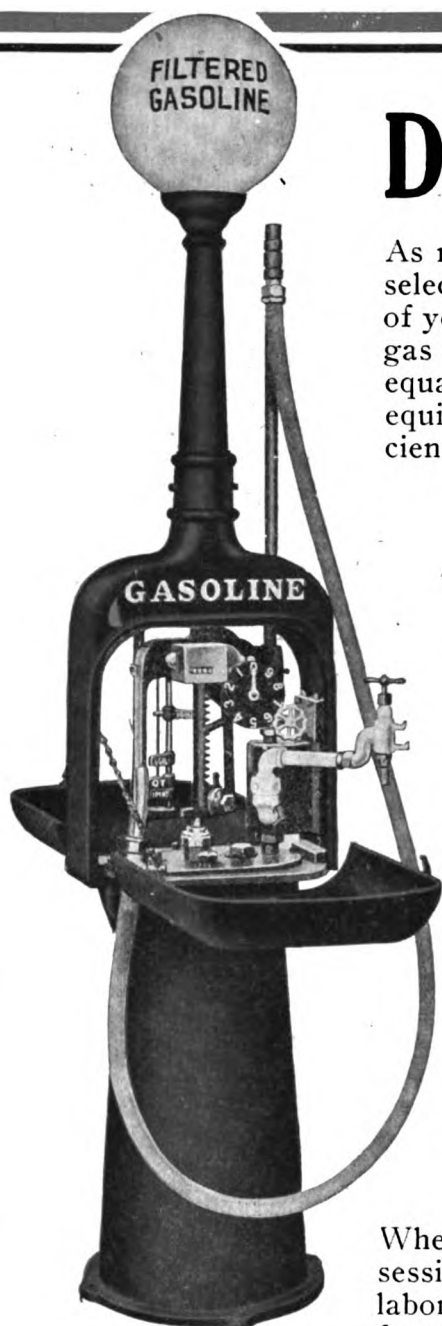
Higgins Spring & Axle Co.

DEPT. 212  
Racine, Wis. —

**NO HOLES  
NO HUMPS  
SUPREME STRENGTH  
FULL LENGTH  
AND A GUARANTEE  
THAT IT IS THE SAME  
AT ALL POINTS**







**Curb Pump No. 101**  
Patented

# Delivering the "GAS"

As much precaution and care should be exercised in selecting suitable equipment for the proper handling of your gasoline business as is used in the selection of gas you sell. The quality of "service" you render is equally as important as the quality of gas — your equipment must "deliver the goods" promptly, efficiently and accurately. The selection of an

## AMERICAN

### Curb Pump No. 101

is a reflection of the utmost care; thorough investigation and highest regard for your and your customer's interests. The double acting continuous flow feature delivering 14 gallons per minute, means rapid service.

The exclusive AMERICAN feature—threaded quantity rod—insures rigidly fixed quantity stops and means accurate measurement. Accessible valves assures a clean pump with minimum effort. "Filtered Gasoline" sign lends attractiveness. Stand pipe and hose draining valve discharge register with clock dial, meter registering up to 100,000, then repeating.

## AMERICAN

### Curb or Roadway Pump No. 102

Where a less expensive pump, but still possessing the same high quality, the time and labor saving features; the assurance of satisfactory service, is required, the Curb or Roadway Pump No. 102 is ideal. The

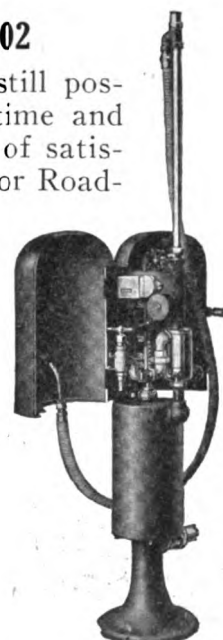
AMERICAN name and guarantee stands behind it.

## AMERICAN

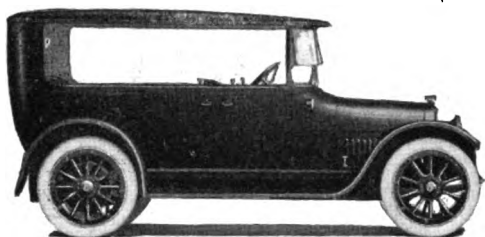
Pumps, Oil Storage Systems, Portable and Stationary Oil Tanks, etc., are used by thousands who demand the best at reasonable prices.

# THE AMERICAN OIL PUMP & TANK CO.

CINCINNATI, OHIO



**Curb or Roadway Pump No. 102**



THE CADILLAC CONVERTIBLE TOURING-CAR



THE CHALMERS CONVERTIBLE SEDAN

## Royalty Once Rode in a Coach

Royalty and Success now ride in motor-cars.

The Master Coach-builders' Craft was for centuries an art. The building of fine motor-car bodies, possessing all the perfection of handiwork of the veteran coach-builder, with modern materials and labor-saving machinery, is one of the great modern industries handsomely exemplified in

## FISHER BODIES

A great army, including royalty and hundreds of thousands of the successful of the world, ride in the Fisher Bodies supplied for many of the best and most popular motor-cars—375,000 cars a year!

It was natural, perhaps almost inevitable, that the Fisher Body Corporation, preserving the traditions of the old coach-builders' craft, building bodies of beauty, strength and durability, should continue one of the strongest of the coach-builders' ideals as to the proper finish of its bodies. The Fisher people use vast quantities of

## Valentine's Varnishes

And other painting materials. Just as *all the finest of the old coaches* were painted and varnished with Valentine's Materials for all the royalty of Europe, and all the luxury- and refinement-loving people of America.

The garage paint-shop which studies successful modern methods will make no mistake if it also follows the lead of the old carriage-builders in the use of Valentine's painting materials. There is economy and there is the satisfaction of beautiful, durable results in their use.

Send for our book, "*Automobile Painting Systems.*"

## VALENTINE & COMPANY

Established 1832

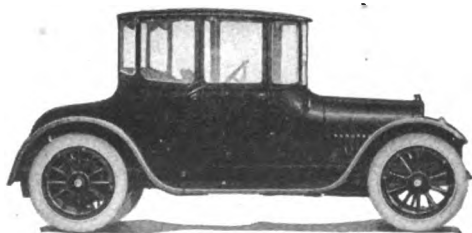
Manufacturers of High-Grade Varnishes and Colors

456 Fourth Avenue

343 So. Dearborn Street, CHICAGO

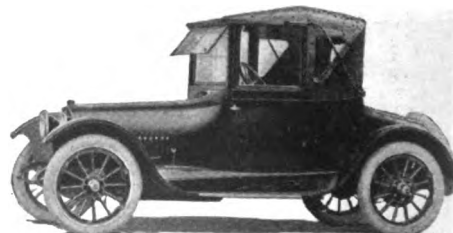
New York

74 Pearl Street, BOSTON



THE CADILLAC COUPE

TRADE **VALENTINE'S** MARK  
VARNISHES



THE BUICK COUPE

# AMERICAN GARAGE & AUTO DEALER

*Published Monthly*

**AMERICAN GARAGE AND AUTO  
DEALER (Inc.)**

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# "NORMA"

## BALL BEARINGS

(Patented)

If the bearings of your ignition apparatus or of your lighting generator fail, where is the advantage of an engine of surpassing quality or of a car of surpassing design? As determining the service capacity of your car, can any detail—how small soever—be considered of minor importance?

The almost universal use of "NORMA" Bearings in the high-grade magnetos and lighting generators used on cars of the better class can have but one explanation, viz., the proved dependability of "NORMA" Bearings in this exacting high-speed service. You may safely take the presence of "NORMA" Bearings as a mark of quality in car and accessories.

**Be Sure — See That Your  
Electrical Accessories  
Are "NORMA" Equipped**

## THE NORMA COMPANY OF AMERICA

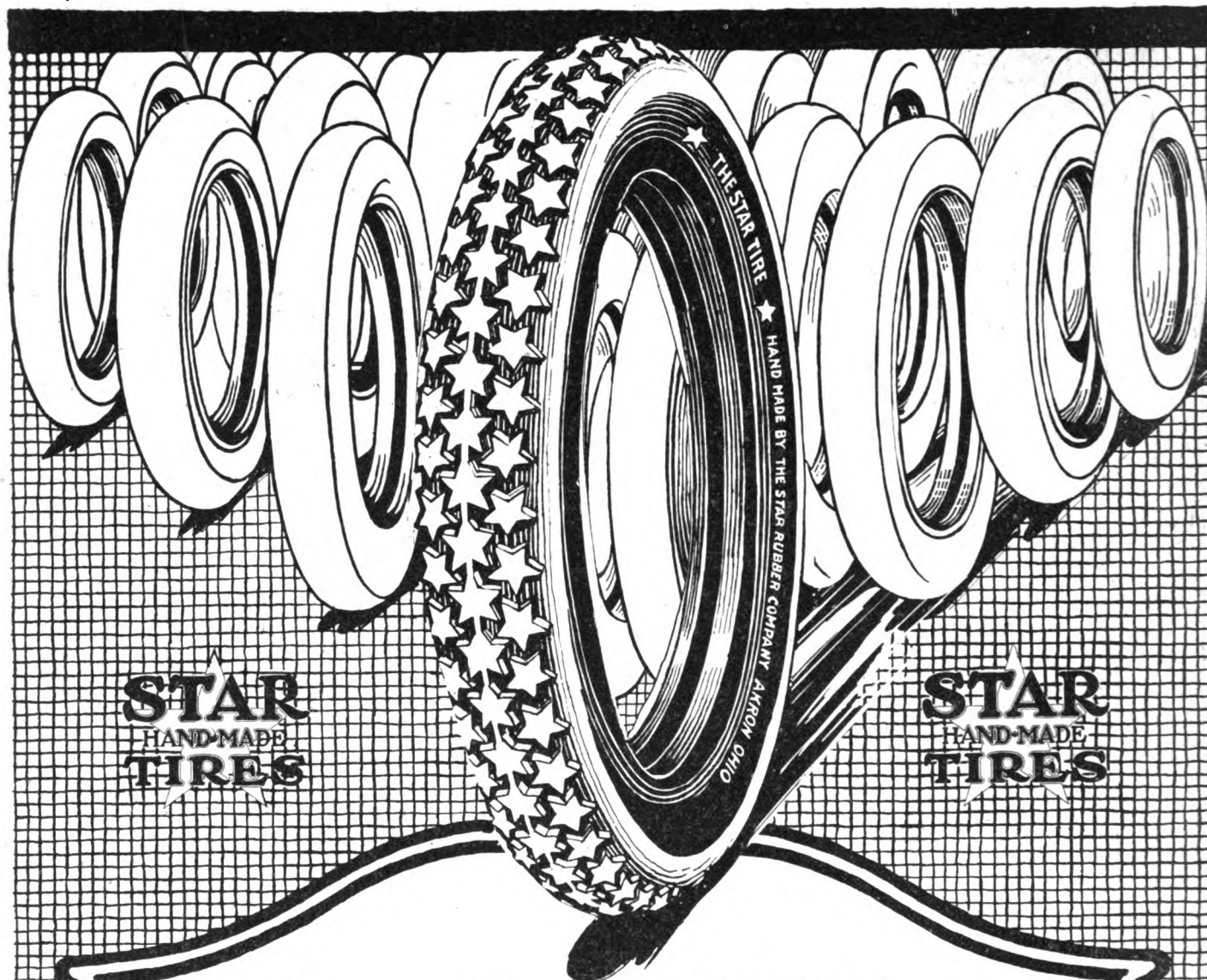
1790 BROADWAY

NEW YORK

Ball, Roller, Thrust, Combination Bearings







## Follow the STAR Lead

The control of the sale of the "All Star" Tire, the "Ribbed" Tread, and the "Red Star" Inner Tube in your vicinity will place you in a secure position as a Tire Merchant—a position where you can put forth freely every effort and cash in on it both in immediate net profits and in the up-building of a permanent business. It is our fixed policy to sell only to

### *Exclusive Dealers*

The **Star** dealer is given **absolute territorial protection**. But that isn't all—he is provided with a most **saleable** line of Tires—the product of Akron's most experienced capital, its best manufacturing brains and most expert labor—Tires of high intrinsic worth—that will justify and repay every sales effort put behind them.

If you are ready to accept this exclusive agency for the newest **Star** in tiredom, write us immediately. **Quick action necessary.** We have distributing stocks in large trade centers. A few such opportunities remain open.

THE **STAR** RUBBER CO.  
HAND-MADE  
TIRES

Dept. 55  
Akron, Ohio

# AMERICAN GARAGE & AUTO DEALER

Comprising AMERICAN GARAGE AND AUTO DEALER, AMERICAN GARAGE MAGAZINE,  
GARAGE EFFICIENCY and RETAIL MOTOR TRADE JOURNAL

Vol. VII. No. 12

New York — CHICAGO — Detroit

May, 1917

## Broadening the Garage Industry

**T**HE garage and auto repair industry is broadening by pressure of circumstances, and this movement should be accelerated by the receptive attitude and co-operation of the garagemen themselves.

The AMERICAN GARAGE AND AUTO DEALER lays down this principle and insists that it is a logical one on which garage and auto repair shop expansion should proceed, viz.: Every piece of machinery which the garage-repair man is called upon to repair or adjust should properly be sold by him originally. In other words, repairing and keeping in working order any piece of machinery represents service which in logic and justice should be indissolubly connected with sales.

The evolution of the garage and repair man into an auto dealer has been rapid and will continue so until a near 100 per cent basis is reached, and this change has been brought about by him in simply adding a sales agency and a demonstration car to his equipment.

Now along comes the tractor and other farm power machinery, and the thinking garageman at once sees in them not only repair and other service work, but sales as well. Hence the live ones in this field are securing agencies for tractors, traction cultivators, etc., and later on, following this same trend of affairs, they will be in the aeroplane business both as repairers and dealers.

## Be a Good Dealer-Organization Man

**B**E a good dealer-organization man and participate in all of the activities of your organization. The best car sales work is being done when factory and dealers work in the closest relations to each other—in other words, when team work is the most vigorously prosecuted.

If you are a Chalmers, Overland, Mitchell, Buick, Saxon, Apperson, Hudson, Elgin, or other dealer, it behooves you to be a live member of your dealer organization and take every possible advantage of your connection with it to absorb and transmute or transmit sales power. Manufacturers are keen to supply dealers' helps, and

every help properly made use of by the dealer cashes in for him.

This is the day of organization and the presence of these manufacturer-promoted special groups of dealers is a monument to the foresight and sagacity of a class of men who have written one of the brightest pages in the history of American industrial and commercial history.

## Avoid the Calf Path

**I**F there is one thing above another that the motor trade should avoid in its development from the incidental, accidental and crude to the state of a perfected industry, it is the calf path. The query is, Is it doing so? Or, Is it growing along the line of least resistance without forethought or planning? This suggests that wonderful commercial lyric by Sam Walker Foss, which we reprint here in Walt Mason style as a warning against careless trade-building:

One day, through the primeval wood, a calf walked home, as good calves should. But made a trail all bent askew, a crooked trail, as all calves do. Since then three hundred years have fled, and I infer the calf is dead. But still he left behind his trail, and thereby hangs my moral tale. The trail was taken up next day by a lone dog that passed that way; and then a wise bell-wether sheep pursued the trail o'er vale and steep, and drew the flock behind him, too, as good bell-wethers always do. And from that day, o'er hill and glade, through those old woods a path was made. And many men wound in and out, and dodged and turned and bent about, and uttered words of righteous wrath, because 'twas such a crooked path; but still they followed—do not laugh—the first migrations of that calf, and through this winding woodway stalked because he wobbled when he walked. This forest path became a lane, that bent and turned and turned again; this crooked lane became a road, where many a poor horse with his load toiled on beneath the burning sun, and traveled some three miles for one. And thus a century and a half they trod the footsteps of that calf. The years passed on in swift fleet, the road became a village street; and this, before men were aware, a city's crowded thoroughfare. And soon the central street was this of a renowned metropolis; and men two centuries and a half trod in the footsteps of that calf. Each day a hundred thousand rout followed this zigzag calf about, and o'er his crooked journey went the traffic of a continent. A hundred thousand men were led by one calf near three centuries dead. They followed still his crooked way, and lost one hundred years a day; ah, many things this tale might teach—but I am not ordained to preach.

The sovereign antidote for the calf-path

method of rearing an industry is *Organization*. With the National Automobile Chamber of Commerce, the National Association of Automobile Accessories Jobbers, the American Association of Garage Owners and similar organizations at work, backed by the support of their respective branches of the industry, centuries of time and oceans of money may be saved through the orderly processes of development for which these organizations stand.

The calf paths of motordom—the very spirit of the men of our industry—established now will be the calf paths which our successors and their successors may be compelled to follow for centuries to come.

### False Economy

THE President and other leaders of public thought in America are quite right in planning for a conservation of the food supply and the industrial energy of the nation, but they have also urged business men and the public in general to keep the regular business activities of the country going, functioning as near the normal as these extraordinary conditions will permit.

The propositions just stated, let it be said, are in sharp contrast with the false economy advice that some of our friends are handing out, such as wear your old clothes, hold no banquets, curtail personal expenditures, etc. A general retrenchment in all personal and corporate expenses as the result of war-time economies is the one thing that can be depended upon to disarrange and mess up trade conditions and dissipate rather than conserve the country's material interests as a whole.

War times are booming, prosperous times and the "wear your old clothes" slogan is a misfit. We are glad to note that automobile manufacturers are among those who are registering a protest against false economy advice.

### Price Maintenance

THE decision of the United States Supreme Court in the Victor Talking Machine Co. case brushes away the last vestige of right the manufacturer ever possessed, or thought he possessed, to fix resale prices. Contracts, letters patent, consignment arrangements with advance payments against future sales, etc., all have been branded as mere subterfuges and evasions designed to stifle competition and exact an unnatural, artificial price for commodities from the public.

The editor of the AMERICAN GARAGE AND AUTO DEALER has battled for the price-protection principle for years. He helped to raise the issue which precipitated the famous John D. Park and Miles decisions, and he is reluctant to admit defeat. But the end of the race has been seen and friends of price-maintenance in the interest of a living profit

for the retailer must face the facts. In most instances "the woman has the last word," but in cases of this sort Uncle Sam's mighty tribunal has it and no back talk is permissible.

Stripped of all surplusages and cut down to the bone, the federal government puts the whole question of prices right up to the retailers. They are not permitted to exercise co-ordinate pressure upon any one, either, but must act through educational rather than coercive processes. Cost knowledge, therefore, must base all right action in behalf of a system of resale (retail) prices which will insure to the dealer a fair return for his service and efforts.

### Higher Automobile Prices

THE action of automobile manufacturers in raising prices on their product has been tempered with conservatism born of reluctance to yield to untoward circumstances and a deep consideration for the public and the future growth of the industry.

Therefore, while prices have been advanced in numerous instances, the advances have not covered the advance in the cost of raw materials. The price-raising step was taken in preference to the only other alternative, that of cutting down on the quality of the product.

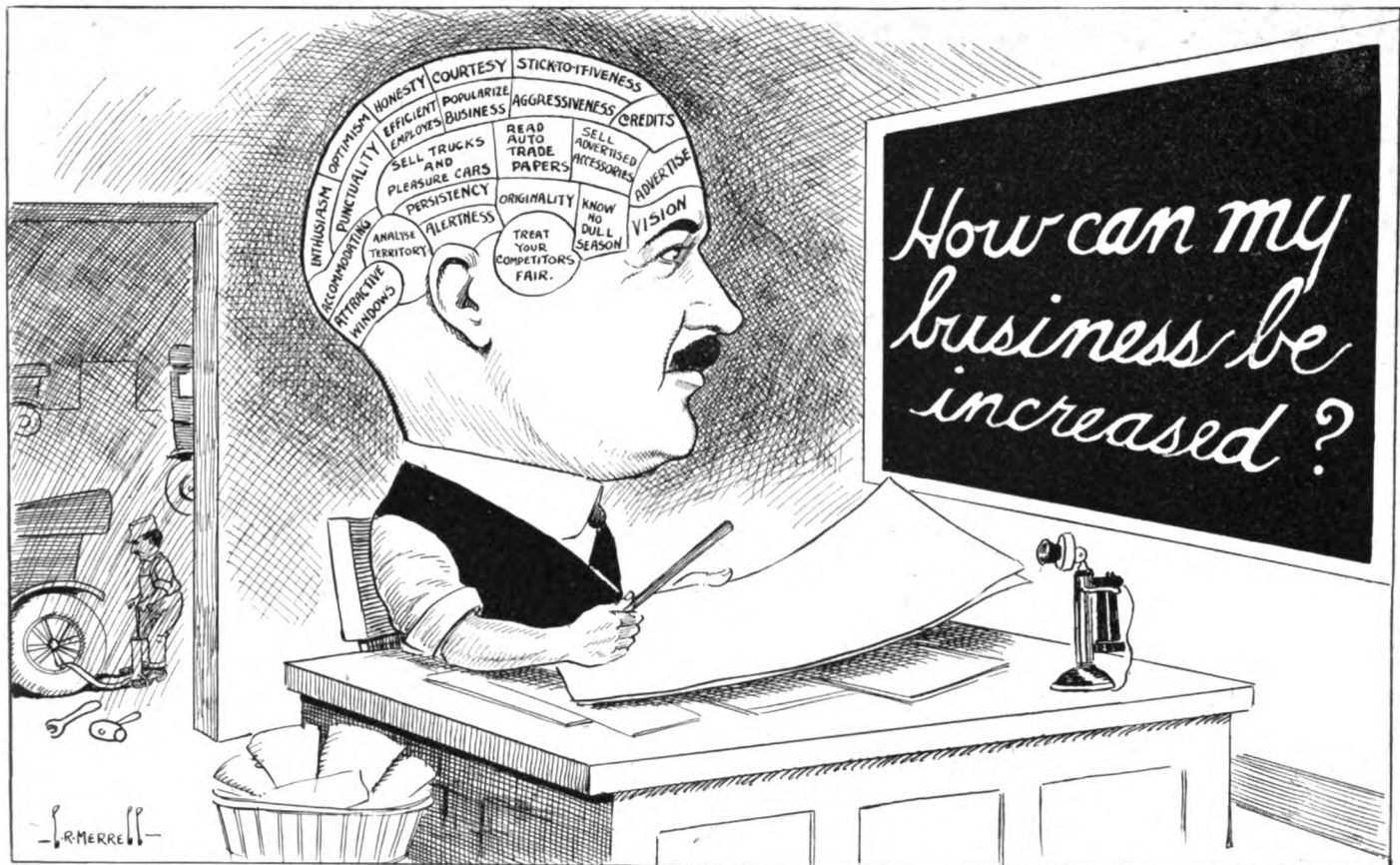
Thus the policy determined upon was that of preserving and improving standards of quality and style in the face of rising costs, and cutting down profits to meet the exigencies of the situation from the standpoint of continued and uninterrupted sales.

### Independent

THE motor car industry is the most independent of all of the important productive industries in this country. The reason is plain. It deals with merchandise, each piece of which embodies a power plant sufficiently potent to provide its own transportation from producing to consuming points.

All other industries are dependent upon railroad transportation for deliveries from factory to dealer. The auto dealer sends a corps of drivers to the factory and the cars are driven back and turned over to the dealer's customers at a cost not exceeding that attached to the rail method—and the prophets of the industry are a unit in stating that the system, incidental in origin, will in a short time make the new way mean a saving in transportation expense.

The drive-away system has come to stay. Freight car shortage and railway paralysis will increase this traffic immensely at times, but the most favorable rail conditions will never eliminate it. Independence is too precious a jewel in its crown of achievement for the motor car trade to surrender.



### By Getting Busy With Your Head.

#### Gasoline Prices Going Up.

Gasoline prices are going up, and this advance is influenced in no small way by the increased use of auto trucks brought about by the war. In France the price has risen to \$1.00 a gallon, and restrictions have been placed upon the use of passenger cars operated for pleasure purposes.

An American auto dealer in Paris states that, despite the high cost of fuel, the demand for cars is growing, yet the salvation of the automobile industry finally must come through an increased supply of gasoline at a lower cost.

Considerable reliance is placed in some quarters on the Wingett process covered by American patents which promises to double the gasoline production from the present supply of oil. In other words, it is a cracking process which releases twice as much gasoline from a given grade of oil as is now being released through the Burton or Ritmann processes.

#### War Taxes.

Considerable interest is manifested in a probable action of Congress in levying war taxes. It is generally understood that the only tax that would be placed upon automobiles would be at the factory and will be levied according to the value of the car, and a consumption tax on gasoline approximating one cent a gallon is under consideration.

#### Used Car Show for Montreal.

The first annual used-car show of Eastern Canada, to be held by the Montreal Automobile Trade Association in the Montreal Arena, has been set for June 20 to 27, thus giving purchasers a chance to become acquainted with their purchases in time to get away to the country for the Dominion Day holiday, July 1. The demand for space thus far has been large. It is assured that practically every make of car will be represented on the floor. In addition, used motor cycles, used motor boats and the usual large array of accessories will be exhibited.

E. G. Sherman of Los Angeles has secured the distributing rights for Sexton Castor motor oil in California, Nevada and Arizona, and the original order placed by Mr. Sherman is one of the largest since that castor lubricant was placed on the market.

The minimum production of the Chevrolet Motor Company for 1917 is placed at 150,000 cars, according to an announcement made by W. G. Meade, Chicago distributor.

The Emperor of Japan rides in a Hudson Super-Six and it is the only American-built car in the imperial household. It was

purchased a month ago from the Hudson distributor in Tokio.

#### Passenger and Commercial Car Ratio.

According to figures furnished by the National Automobile Chamber of Commerce, 1,617,708 motor vehicles of all descriptions were produced in the United States last year and had a retail value of \$1,088,028,275. Eighty per cent more cars were manufactured in 1916 than in 1915.

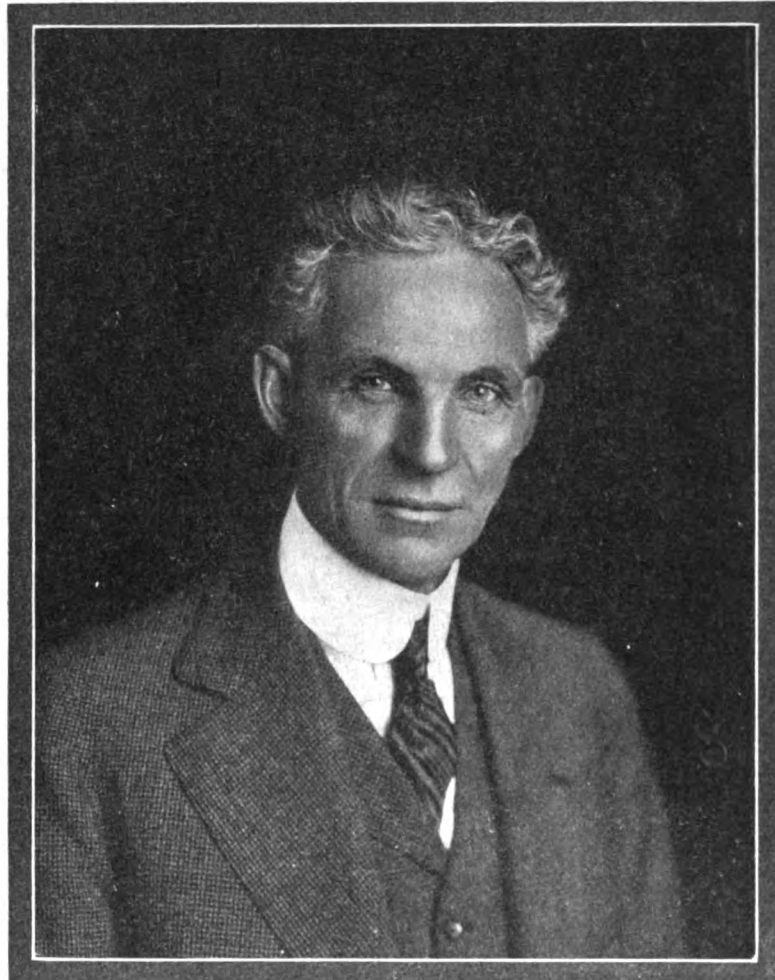
As between motor passenger cars and motor trucks for 1916, these figures show the value of the passenger car production was \$921,378,000, as against \$166,650,273 for trucks and commercial vehicles.

This places the value of the trucks about 17½ per cent of the value of the passenger cars. Mr. E. F. Kirchberger, president of the Truckmobile Co., declares that 17½ per cent can not be used as a basis for comparison between the number of trucks and the number of passenger cars now in use. A conservative estimate shows fully 30 per cent of all the passenger cars manufactured in the last five years, previous to 1915, are being used for commercial purposes at present.





## Men Who Made the Auto Industry



**HENRY FORD**

**I**T is almost unnecessary to outline the career of Henry Ford, auto builder, philanthropist and world citizen, as nearly every schoolboy is familiar with it. It may be here said, however, that he is the most conspicuous figure in automobile history, not only because of what he has done but because of what he is. Between one-fourth and one-fifth of all of the motor cars driven in America were built by him. He pioneered quantity production and developed it so far beyond that of any other maker that his works stand alone. In pricing his product low and paying wages that are high, he again represents conspicuous and noble isolation. Ford as a man is an industrial and financial Colossus with the soul of a plebeian. He thinks the thoughts of the masses and has given evidence that no exterior conditions or influences can drive him into the ranks of the classes. Ford was born on a farm near Detroit in 1863, and no prophet can foretell what startling things he may yet add to his present startling list of achievements.

# The Auto Trade and the War



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**T**HE automobile and garage industry will be stimulated rather than depressed by the entrance of the United States into the world war, if the consensus of views expressed by motor car manufacturers and makers of allied products is to be accepted. General business will be given a large impetus as the result of the war activities, and those special industries that will suffer, in all probability, will be so far outnumbered by those which will gain in orders that the net result will be beneficial. In our own trade the situation will doubtless develop along parallel lines; the injury that some few angles of the business will experience as the result of raw material scarcity and high prices, is almost certain to be doubly offset, or more, by the increased demands made upon it for trucks, light commercial cars and passenger cars, for uses far removed from the pursuit of pleasure, while the impetus given to touring stimulated by general business prosperity and a greater mileage of good roads will constitute a factor of direct importance to the retail and service branch of the trade. All in all, the outlook is bright for continued and increasing auto trade prosperity and the AMERICAN GARAGE AND AUTO DEALER readers should prepare to take care of the increased business and reap the attendant rewards.

Glen P. Thayer, president and manager of the Holland Demountable Wheel Co., Holland, Mich., in response to questions put to him by the editor of this journal, writes:

In answer to your first question: "Will the war improve or injure general business?" we are of the opinion that there will be, in certain lines of business, curtailing of expenses and perhaps a slight reduction in the number of employees, for a short period of time,

after which, we believe that business will pick up and we will see one of the most active business periods the country has ever known.

In answer to your second question: "Will it improve or injure the automobile business? If so, why and in what respects?" we believe the manufacturers of some of the highest priced automobiles may, perhaps, for a season, feel the effects of the war, their former customers either purchasing the medium priced car for temporary use or deciding to continue to use their old car for another season. The medium and popular priced cars we believe will experience one of

the biggest season's business they have ever known, and while manufacturers of some of the highest priced automobile accessories may not have as large a volume of business as they had the preceding season, we believe that none will suffer more than 10 per cent decrease.

J. C. Flowers, president Premier Motor Corporation, Indianapolis:

Personally, I feel that the war will tend to increase business rather than depress it. Large manufacturing orders from the government and greatly increased orders from

our allies, due to their greatly increased purchasing power, as a result of the American loan, will put stupendous sums into circulation, and this money must find its way into the pockets of the public.

Thousands upon thousands of new automobile prospects will be created among those who have looked upon the motor car as a luxury beyond reach. Slightly higher prices will prevail, both in the first cost of motor cars and in their operation, but increased money making power will more than offset this.

The war will greatly stimulate all American industry, and thereby make the entire country more prosperous, which means a healthier status for the motor car industry.

W. J. Kendrick, president Dearborn Truck Co., Chicago, writes:

I do not believe the war will injure general business, but rather will improve business as a whole, for it is natural to believe that as soon as the government gives war orders for immense amounts of war material, supplies, etc., it is going to keep a large number of manufacturers busy on such orders, while the additional amount required by the allies of Europe will keep our factories and shops going until the war is settled.

The only injury the war can do to the automobile business or more particularly, the truck manufacturers, would be in case government contracts required so much steel that the manufacturers of automobile parts would find it difficult to secure the required amount of steel to take care of their orders, and this trouble is rather serious just now. It will not be so much a question of getting orders for trucks as it will be a question of getting material to fill the orders.

The economy and efficiency in the use of motor trucks for general purposes have been so well established, that the lighter delivery trucks are taking the place of horses and wagons at this time for purely economical reasons, as the cost of operating the lighter delivery trucks is far less than the cost of feeding and maintaining teams with the present high prices of feed stuffs. On the whole, I feel confident there is going to be a big improvement in business and this is going to be one of the most prosperous years we have enjoyed, despite the war.

K. P. Drysdale, advertising manager Cadillac Motor Car Company, Detroit:

In our opinion the war will have a tendency to improve business in general, and if this is correct the automobile business will share in the general prosperity. The billions of dollars to be raised by the government will soon find its way into the channels of trade through the production and purchase of munition and other equipment and supplies for the army and navy.

We know, of course, that the war in Europe has served to promote general prosperity in this country, by the purchase of many millions of dollars worth of our products, and there is no question that the spending of further millions along the same line will continue to promote prosperity.

Hudson Motor Car Co., Detroit, Mich.:

Viewed from the experience of the past, it is very probable that America will have greater prosperity than it ever has experienced, for the government is soon to expend \$7,000,000,000, which will give employment, will consume raw products and distribute that money among the people. The desire of the people to own motor cars must be just as great as ever and if they have the money with which to satisfy their ambition to own a car, they undoubtedly will be satisfied.

H. T. Wheelock, advertising manager Velie Motors Corporation, Moline, Ill.:

We confidently believe the entrance of the United States into the world war will prove a stimulus to general business, particularly in those lines intended for the great majority of American people. That we do not anticipate any decrease in Velie business is best shown by the extensive improvements and additions being made to our factories to successfully cope with the increasing demand for Velie passenger cars, motor trucks and tractors, which is even now making itself felt.

H. B. Gehring, manager Hanard Sales Co., Milwaukee:

The writer's candid opinion as to the possible effect of the war on business conditions in general is based entirely on the one vital question: Will we have conscription?

If we have this, then I venture to say that all business will be affected as we are at present already suffering from an acute labor shortage in various branches of our industries. Considering that absolutely no

## The Business Man's Service to His Country

**T**HE best service that business men as such can render their country in the perilous times through which we are now passing is for them to keep a clear head and resolve to exercise their fullest powers in keeping the usual industrial and commercial processes of America in the highest and most efficient form, plus that extra and intensified effort which will so increase production as to meet the unusual demands made upon our industrial and commercial establishment by the war. The patriotic business man will radiate prosperity, the unpatriotic business man will talk and act hard times, and thus undermine the foundations of his country's financial and military power.

C. M. CARR,

Editor American Garage and Auto Dealer.

emigration is coming in to fill up the gaps left by those that have volunteered or will be conscripted, it is evident that things will be in a sorry way in about three to four months from now.

This applies to the automobile industry as well, as Uncle Sam is feverishly recruiting all skilled mechanics from this branch.

I do not look for hard times, but as outlined above the effect of the war is sure to be felt seriously in a few months.

A. R. Wellington, advertising manager Elgin Motor Car Corporation, Chicago:

So far as our diagnosis of the automobile situation is concerned we really believe that for most automobile companies the sale of cars will be on a larger scale than before the war.

In the first place it is more than likely that some of the largest automobile plants in the country will be taken over by the government, in which case the production of automobiles will most probably be reduced by one-half. This would keep the balance of the companies operating night and day to keep their production in line with their sales.

It is our understanding that when the war started, money was very tight in Canada, but even under those conditions several companies report that their sales have tremendously increased in Canada during the past two years. On the other hand the United States Comptroller's report shows that our banks have assets of at least \$16,000,000,000, an increase of \$5,000,000,000 over four years ago, so if the Canadian situation is any criterion automobile sales should increase rather than fall off in this country.

So far as this company is concerned there has been no let up in the demand for Elgin cars coming from Elgin dealers throughout the entire country.

R. C. Rueschaw, sales manager Reo Motor Car Co., Lansing, Mich.:

I look for the most tremendous commercial expansion following the war. I will say frankly that I am one of those who hoped this country would not be dragged into it, but now we are in it we're for it and are going to make the most of it, and in reviewing the situation, I cannot see anything but prosperity to follow.

As a result of the sinking of a tremendous number of merchant ships by the submarines, we are today rejuvenating our ship yards and adding to them at a tremendous rate with the result that, when the war closes, we will have these great plants already equipped and manned by experienced men to go on building a merchant marine for ourselves. We have, in fact, by the seizure of the German ships, acquired a large number of very excellent boats which we will doubtless keep on some terms to be decided by the authorities at Washington.

Heretofore we Americans have been satisfied to supply our own country with its necessities and have given scant thought to the development of our foreign trade. The extension of foreign credits was the first requisite to the development of that trade, and heretofore, with the gold balance on the other side of the ocean, our financiers were not eager for that business.

Now all that is changed. We are today the custodians of more gold than all the other countries in the world combined. Money is cheaper than ever before, and our bankers are searching for places to put it at interest rates and on terms that formerly

would not be considered for a moment. Inasmuch as we are the only lending nation now, the newer countries of South America and South Africa, who have always been heavy borrowers, must, of necessity, look to us as their source of supply.

Before the war, it was actually cheaper and quicker to ship from New York to Hamburg, Germany, and thence to South America, than to ship direct, simply because there were no big lines running between American ports and those of South America and South Africa. This is rapidly being changed, not by our volition, but by necessity. We will only be following the way of least resistance by maintaining these routes. Naturally the banking connections which are now being formed between this country and those others, will be accompanied by the establishment of commercial relations.

This is our great opportunity and whether the war lasts for several years, or happily may be more speedily terminated, I cannot see but that America must reap a rich harvest for many years to come. We are starting out on a commercial expansion that is vastly greater than even we, ourselves, appreciate, and it is going to mean that America will hereafter be a world power in commerce even more than in diplomatic affairs.

This will call for those implements which have been peculiarly the result of American ingenuity. Farm machinery, implements and tools of all kinds—yes, and automobiles, will become the necessities of millions, who, before the war, knew little of and certainly never hoped to possess such luxuries.

F. A. Llewellyn, Ellington Electric Co., Quincy, Ill.:

In our opinion the war should act as a stimulus to general business. The \$7,000,000,000 loan of the government will be practically all spent in this country for raw material and manufactured products. Raw materials and foodstuffs will command even higher prices than at present. Industries in all the countries at war are in a prosperous condition. This general prosperity will naturally be reflected on the automobile business. Prices will be higher but there will be plenty of money to spend, as wages will be higher.

Smith Motor Truck Corporation, Chicago:

If the war has done nothing else, it has shown business men that the truck has come to stay, that it is a factor that cannot be overlooked. It sounded the knell of the horse-drawn truck. The battlefields of France proved the superiority of the motor truck in every respect—in service, in speed, certainty, ease of operation and in cost.

Peace orders will be greater than war orders. The farmers and merchants realize that if motors will cross ditches in the war zone, a little mud can't stop them. To market the corn, wheat or cotton of America requires fifteen and one-half million "man-days" each year when done by the old-fashioned horse drawn method. Think of the saving in time when this hauling is done by motors!

The world has been converted to the efficiency of the motor truck and looks for even greater advances in the months after the war.

Harry M. Jewett, president of the Paige-Detroit Motor Car Company:

Every factory in the country running to full capacity, every laboring man getting top-notch wages, and every factory selling its product at a fair profit; every farmer getting top-notch prices for his grain and cattle. Why should anyone think under these conditions, that there is going to be any contraction in the purchasing power of the people? The people have the money and they want manufactured material of all kinds.

The government is not going to interfere with general business in this country or commandeer the manufacturing institutions. Have we not supplied more than two million troops of the allies with munitions, clothes, arms, motor trucks and other articles used in war without taxing our manufacturing resources beyond the limit?

W. E. Stalnaker, vice-president and director of sales Pathfinder Company, Indianapolis:

Will say that after having thoroughly diagnosed the situation to the best of our ability, we have arrived at the conclusion that there is going to be a great shortage of automobiles—we might add, a great shortage of motor driven vehicles. Our reasons for making this statement are as follows:

Some manufacturers of motor driven ve-

(Continued on page 18.)

# First Used Car Show Big Success



A. J. March, Pres. Milwaukee A. D., Inc.  
Frank J. Edwards, Ch'm Inspection Com.

**Milwaukee Dealers' Experiment Demonstrates Selling Qualities of Rebuilt Cars Properly Guaranteed at Right Prices—Movement Extends to Other Cities—Large Forward Step.**

**Editor's Note.**—The used car problem has been solved for Milwaukee and cities of that size and larger, if the record made at Milwaukee April 20 to 27 means anything. A permanent mart will now be established. Committees from other cities visited the show and a hundred others sent letters of inquiry.



N. E. Osmond, Ch'm Sale Committee.  
John G. Wallaeger, Ch'm Adjustm't Com.

**T**HE first used car show ever staged in the history of the motor car industry took place in Milwaukee, April 20 to 27. It was the creation of the Milwaukee Automobile Dealers, Inc., whose officers planned its operations with simplicity and executed them with precision and success. There were nineteen exhibits in the big Milwaukee Auditorium where the show was held, and although lacking decorations, music and other attractive paraphernalia of an auto show, large crowds were daily attracted to witness an event that constitutes an epochal mark in the history of the automobile industry.

Strictly speaking, the used car show was not a show but a sale of used cars. It was in fact an experiment, the tremendous importance of which has already been recognized by the automobile interests of the country, and it will lead to the development of used car shows that will equal if not rival the automobile shows of the past in which nothing but new cars have been exhibited. Indeed the Milwaukee Automobile Dealers, Inc., have a similar event scheduled for State Fair week this Fall which will be a show with all the music and decorative trappings that have characterized such events.

There were 95 cars on the floor at one time, and these cars were replaced as rapidly as sold. Sales on the floor and in salesrooms of exhibitors attributed to the show numbered over 200. The sale prices were based upon the price allowed for the car when taken in by the dealer exhibiting,

with the cost of overhauling, repainting, etc., added. No reduction in price was made during the progress of the show without the consent of the sales committee.

The management of the show was in the hands of the officers and directors of the Milwaukee Automobile Dealers, Inc., who are as follows:

A. J. March, President; John G. Wallaeger, Vice-President; Jesse A. Smith, Treasurer; H. W. Bonnell, Secretary; Bart J. Ruddle, Asst Secretary and Show Manager.  
Directors—F. J. Edwards, A. J. March, John Wallaeger, L. D. Frint, Jesse A. Smith, H. W. Bonnell, R. C. Chidester, G. W. Browne, N. E. Osmond.



BART J. RUDDLE,  
Assistant Sec'y M. A. D., Inc., and Show Manager.

These officers worked through three committees which are as follows:

Sales Committee—N. E. Osmond, Edgar F. Sanger, A. C. Hoppe.  
Inspection Committee—Frank J. Edwards, A. J. March, George W. Browne, Jesse A. Smith, H. W. Bonnell.  
Adjustment Committee—John C. Wallaeger, Walter H. Diener, W. H. Krueger, F. W. B. Achen, R. C. Chidester.

The list of exhibitors and the space they occupied in the Auditorium are as follows:

Space.	Exhibitor.
2-3	Frint Motor Car Co.
4-5	Chalmers-Wisconsin Co.
6-7	Jesse A. Smith Auto Co.
8-9	Curtis Auto Co.
10	Diener-Nelson Co.
11	Emil Estberg.
12	Rademacher & Jaeger.
16-17	Mitchell Auto Co.
18	Achen Motor Co.
19	Motor Car Sales Co.
20	Vellie Motor Car Co.
23-24	Klissel Kar Co.
25-26	Jones Auto Co.
27-28	R. D. Rockstead.
29	Edgar F. Sanger Co.
30	Cole Motor Co.
31-32	John G. Wallaeger Co.
33-34	Packard Motor Car Co.
35-36	George W. Browne.
37	Winton Co.
38	Hoppe-Hatter Motor Car Co.

Among the interesting features of the show was the fact that a number of sales were made while cars were being inspected on the curb outside before they were placed on the floor, and that a number of sales took place within thirty minutes after cars had reached the floor.

When Show Manager Ruddle was asked by an AMERICAN GARAGE AND AUTO DEALER representative as to the chief lessons of the show he said: "The show demonstrated the fact that used cars, put in proper condition by responsible dealers, and offered at a price that is right, in some



central market, will sell; whereas, used cars offered for sale at allowance price in an 'as is' condition will not sell. They are

complished, the foundation has been laid for putting the used car business on a profit basis."

During the progress of the show, committees of dealers from Montreal, Sioux City, St. Paul, Kansas City, Chicago and Toledo visited Milwaukee for the purpose of investigation and were well pleased with the results.

Mr. Ruddle states that something like 100 letters were received from dealer or-

for year round use that will store in an exposition way 300 cars.

Note carefully the tags used on the cars displayed in the Milwaukee show; a pen correction which was found to be necessary; also the order blank which makes the sales method clear.

#### Prices Used Cars Brought.

The following are some of the prices recorded by the sales committee (name, year, capacity and price in the order named):

Buick, 1916, 5, \$790; Cadillac, 1911, 5, \$325; Chalmers, 1913, 5, \$200; Chandler, 1915, 5, \$700; Chevrolet, 1917, 5, \$475; Cole, 1916, 7, \$1,375; Dodge, 1915, 5, \$550; Dodge Sedan, 1915, 5, \$625; Dodge, 1915, 5, \$600; Dodge, 1915, 5, \$550; Dodge, 1915, 5, \$500; Dodge, 1915, 5, \$525; Dodge, 1915, 5, \$570; Dodge, 1915, 5, \$550; Dodge, 1915, 5, \$625; Dodge, 1915, 5, \$525; Dodge, 1915, 5, \$550; Dodge, 1916, 5, \$650; Dodge, 1916, 5, \$575; Dodge,

**Advance Inspection**

Admit

Name of Car \_\_\_\_\_

Year \_\_\_\_\_ Model \_\_\_\_\_

Inspected Apr. \_\_\_\_\_ 1917

**INSPECTION COMMITTEE**

Per \_\_\_\_\_

the cars that were on the floor when the show closed."

He added: "Our show proved that in

No. 401

**Dealer's Record Tag**

Date \_\_\_\_\_ Time \_\_\_\_\_

Dealer's Name \_\_\_\_\_

Name of Car \_\_\_\_\_ Year \_\_\_\_\_ ROADSTER TOURING

Pass. Capacity \_\_\_\_\_ Motor No. \_\_\_\_\_ Received By \_\_\_\_\_

Sold To \_\_\_\_\_ By \_\_\_\_\_

Date \_\_\_\_\_ Price \_\_\_\_\_

KEEP THIS TAG FOR CHECKING WITH COMMITTEE

**Removal or Sale Memo.**

Name of Car \_\_\_\_\_ Year \_\_\_\_\_

Sold To \_\_\_\_\_

Removed By \_\_\_\_\_

Dealer's Name \_\_\_\_\_

Time \_\_\_\_\_ Date \_\_\_\_\_

Clerk \_\_\_\_\_ Record \_\_\_\_\_

TO BE SURRENDERED TO INVENTORY CLERK ON REMOVAL

**Entrance Memo.,**

Date \_\_\_\_\_ Time \_\_\_\_\_

Dealer's Name \_\_\_\_\_

Name of Car \_\_\_\_\_ Year \_\_\_\_\_ TOURING ROADSTER

Pass. Capacity \_\_\_\_\_ Motor No. \_\_\_\_\_

Received By \_\_\_\_\_ Price \$ \_\_\_\_\_

TO BE TAKEN UP ON ADMITTING CAR TO SALE

cities the size of Milwaukee a central market for used cars is not only desirable but necessary, if the dealer is going to handle used cars on a break-even basis. This ac-

Milwaukee, Wis., April \_\_\_\_\_, 1917.

Dealer's Name \_\_\_\_\_

Address \_\_\_\_\_

Please enter my order for a used \_\_\_\_\_

Year \_\_\_\_\_ Model \_\_\_\_\_

Delivery to be made \_\_\_\_\_ or as soon thereafter as possible.

If within fifteen days after notification that car is ready for delivery, payment is not made according to this agreement it is understood deposit is forfeited.

Title to car to remain with \_\_\_\_\_ Dealer's Name \_\_\_\_\_ until paid for in full.

This being an order for a used car, it is understood that purchaser has examined motor car and accepts it in its present condition with noted exceptions.

The car herein ordered is sold in its present condition with the understanding that the purchaser may return said car seven days from date if not as represented by notifying the adjustment committee, 316 Germania building.

It is also agreed that in the event of purchaser returning car, purchase price shall be applied on another used car of equal value in the stock of the dealer making sale, or the amount paid for the used car may be applied upon the purchase price of a new car from said dealer.

There are no understandings, agreements or representations, express or implied, not specified herein respecting the goods hereby ordered.

Price of car \_\_\_\_\_ \$ \_\_\_\_\_

Freight and preparing for delivery \_\_\_\_\_ \$ \_\_\_\_\_

Extra Equipment \_\_\_\_\_ \$ \_\_\_\_\_

Total \_\_\_\_\_ \$ \_\_\_\_\_

Deposit \_\_\_\_\_ \$ \_\_\_\_\_

Balance due \_\_\_\_\_ \$ \_\_\_\_\_

Signed \_\_\_\_\_

Address \_\_\_\_\_

Salesman \_\_\_\_\_

Accepted: \_\_\_\_\_

Dealer's Name \_\_\_\_\_

By \_\_\_\_\_ Manager.

ganizations in other American cities which had not sent committees or special representatives, indicating widespread interest in the experiment so successfully put through by the Milwaukee dealers.

The outcome of the first used car show is likely to include a permanent organization in Milwaukee for used car sales purposes. It is said that a corporation to be known as the Used Car Appraisal and Sales Co. will be organized to undertake the buying and selling of used cars in Milwaukee with forty-six local dealers as stockholders. An elaborate plan of merchandising is being figured out, which includes the erection of a special building

#### The Three Elements that Governed Milwaukee Show

All cars exhibited in the Show were taken in or bought at the RIGHT PRICE.

Those that needed to be put in condition by a visit to the shops were MADE RIGHT.

Finally, the cars were in a dependable condition for sale and were SOLD RIGHT.

It established the used car where it belongs in the public mind: namely, something always to be considered by a prudent purchaser.

Every phase of the plan reflected the greatest confidence of the dealers in the car values they presented. Time payments were accepted and a seven-day trial allowed every buyer, with the privilege of an exchange at the end of that period.

A few "as is" cars in good condition were placed on the floor to contrast their selling form with that of the rebuilt and repainted car, the result being favorable to the latter.

1916, 5, \$600; Dodge, 1916, 2, \$660; Dodge, 1916, 5, \$550; Ford, 1912, 5, \$175; Ford, 1914, 5, \$185; Ford, 1915, 5, \$255; Ford, 1916, 5, \$350; Grant, 1916, 2, \$450; Grant, 1917, 3, \$700; Halladay, 1912, 5, \$250; Hudson, 1915, 2, \$650; Hupmobile, 1915, 5, \$695; Hupmobile, 1916, 5, \$750; Imperial 19, 1915, 5, \$400; Jeffery, 1916, 2, \$750; Kissel, 1914, 5, \$450; Kissel, 1915, 5, \$600; Krit, 1914, 5, \$385; Little, 1915, 2, \$175; Lozier, 1915, 2, \$500; Marmon, 1915, 7, \$1,300; Maxwell, 1914, 5, \$350; Mitchell, 1913, 5, \$225; Mitchell, 1914, 5, \$300; Mitchell, 1915, 7, \$700; Mitchell, 1916, 7, \$1,150; Mitchell, 1915, 7, \$675; Monroe, 1916, 2, \$460; Monroe, 1916, 2, \$275; Oakland, 1916, 5, \$850; Oldsmobile, 1916, 5, \$950; Oldsmobile, 1916, 5, \$925; Overland, 1912, 5, \$175; Overland, 1914, 5, \$400; Overland, 1914, 5, \$350; Overland, 1915, 5, \$425; Overland, 1915, 5, \$400; Overland, 1915, 5, \$425; Overland, 1916, 2, \$525; Overland, 1916, 2, \$450; Overland, 1916, 5, \$475; Overland, 1916, 2, \$450; Overland, 1916, 5, \$525; Overland, 1917, 5, \$600; Packard, 1910, 5, \$375; Paige, 1913, 5, \$750; Paige, 1915, 7, \$700; Pullman, 1915, 5, \$500; Regal, 1914, 2, \$325; Reo, 1913, 5, \$375; Reo, 1914, 5, \$300; Reo, 1915, 5, \$600; Reo, 1916, 5, \$750; Saxon, 1916, 2, \$500; Stearns-Knight, 1916, 5, \$900; Studebaker, 1914, 5, \$425; Studebaker, 1914, 5, \$350; Studebaker, 1914, 7, \$475; Studebaker, 1915, 5, \$425; Studebaker, 1915, 7, \$500; Studebaker, 1916, 7, \$625; Studebaker, 1916, 7, \$400; Sun, 1917, 5, \$700.

#### At Chicago Show.

Mr. Ruddle and other Milwaukee dealers attended the Chicago show held later and gained much new information that will be useful in staging their next show.



Interior of Milwaukee Auditorium when the first Used Car Show ever staged opened for business April 20, 1917. The small picture is an inspection scene in front of the auditorium at the curb.

### Used Car Observations.

Doll up your used cars and then stick for a proper price.

\* \* \*

It is not what a used car of a certain model sold for last week at Omaha or Dayton, Ohio, but what it will sell for in your locality when you put a similar model on the market, that counts.

\* \* \*

The "As is" used car is junk and must be sold as junk. The used car made mechanically right, retired, repainted and seats recovered is a nice piece of merchandise that should bring a profit-included price.

\* \* \*

All the market reports in the world will not help you sell a used car for more than it is intrinsically worth or nullify the mistake you have made in paying too much for it when you took it in.

\* \* \*

When buying a used car—making an allowance on it when receiving it as part payment on a new car—be a bear. Fix your value right and then let some other

dealer outbid you at the peril of his profit on a new car sale if he wants to.

\* \* \*

When used cars become standardized as merchandise and sold with a guarantee behind them, they are going to make some inroads into the new car preserves. It is in the used car salesrooms that the real bargains will then be (and in some cases are now) found.

\* \* \*

The used car departments of car sales agencies have up until now been operated at a loss. Reason, too large allowances made on old cars. Remedy, employ the successful second-hand merchant's methods in both buying and selling.

\* \* \*

The used car problem will never be solved as long as the dealer is not willing to let his competitor have a used car at a price above the one he is able to make on a strictly business basis. Make your price, then stick.

\* \* \*

Some dealers play safe by taking in used cars and selling them for the customer's account. If the customer buys a new car,

the amount realized on the sale of the old car is credited on the purchase price of the new one. The Cadillac Motor Car Sales Co., Newark, N. J., operates under this plan.

\* \* \*

Decatur, Ill., dealers believe that buying right is the solution of the used car problem and that the best way to convince car owners of the really low value of old cars is to induce them to attend an auction sale of that kind of junk. At a recent auction sale in that city the prices brought by used cars ranged from \$45 to \$175, the average price being \$163. This is a pointer to the salesman who is asked to make an allowance on a used car.

\* \* \*

Depreciation in cars as the result of out-dating will not be as great in the future as it has been in the past, due to the standardization of models that has taken place. It is not likely that the lines and parts will undergo any such radical changes in the next five years as they have in the last five. This will minimize depreciation on account of obsolete and faulty construction and style.

(Continued from page 14.)

hicles will have their output curbed, if not taken up altogether, on account of their manufacturing other articles more necessary to our government for war purposes. And furthermore, our government is going to be a large consumer of practically all kinds of motor driven vehicles. This will mean a new customer for the manufacturers of these lines.

This country has never been in such a prosperous condition as it is just at this time, before entering war. There is more money in circulation than ever before. All producers are getting high prices and on top of our present condition our government is going to turn loose millions and hundreds of millions of dollars, all of which will get into circulation in the United States, and this is certainly bound to put our country in a most flourishing financial condition and we should all look for higher prices on everything.

Ralph Sparling, sales manager Detroit Truck Company, Detroit:

We believe that some lines of business will be improved, but we are not sanguine as to every line being increased, as a great many seem to be at their peak at this writing and would probably hesitate in their development until conditions are more settled.

We have every reason to believe that the automobile business, both pleasure cars and commercial vehicles, will continue to prosper. It occurs to us that the lower priced car and truck manufacturers will doubtless show an increase in business, as many prospects who anticipated buying expensive models will now economize. It also seems to us that a large percentage of the business of the country is governed more or less by the average farmer's condition, and, as this appears to be excellent, it is logical to assume that these businesses will continue to thrive.

We note from information recently received from several of our dealers in large farming zones that nearly every farmer is an A No. 1 prospect for a passenger car and truck.

I. D. Perry, vice-president Perry Auto Lock Co., Chicago:

We do not believe the war will injure the general business; in fact, we think it will make it better. The only way that we think it could have any effect on business would be a scarcity of help if too many men are taken away on account of entering the army or naval service.

In regard to it injuring the automobile business, we cannot see any reason why it should. The amount of money which will be spent in this country on account of war material should place everyone in a very prosperous condition.

We are planning on a very large business ourselves the coming year, and have not made any changes whatsoever on account of the war.

Geo. P. Russel, secretary and treasurer Russel Motor Axle Company, North Detroit, Mich.:

I don't look for any material change in general business conditions as a result of the war. It all depends upon the duration of the war.

The passenger car business, I think, will be seriously affected as a result of the heavy taxes that will be levied upon incomes. There is now an evidence of retrenchment in the expenditures for luxuries.

The truck industry, on the other hand, should be greatly aided by the participation of the United States in the present big war, especially if the mobilization of our troops becomes necessary. Being the necessary part of any business economy, the demand for trucks will increase under the present conditions attending general business.

About 4 per cent of all truckage is done by motor vehicle, and the industrial world is rapidly awaking to the advantages of motorized delivery.

Hugh H. Goodhart, Franklin Automobile Company, Syracuse, N. Y.:

We are of the opinion that general business will be stimulated by the war, and the automobile, so firmly entrenched as an economic necessity, will not suffer. This is particularly true of the efficient car, which does its share to conserve national resources, such as gasoline and rubber.

Elmer Apperson, president Apperson Bros. Automobile Co., Kokomo, Ind.:

Our entrance into the war cannot but intensify our general business activities. War, to wage successfully, is a business which calls for the utmost in our economic life,

as well as in our army and navy. Business activities must increase to meet the wants of our military force, keep Europe fed and clothed, and to hold and increase our foreign markets. A healthy business outlook is forecasted by the basic business barometers, the freight car situation and the money market.

One cannot but entertain an optimistic viewpoint in the relation of the war to the automobile business. The automobile has ceased to be looked upon as a luxury and is now not only an economic necessity but also a very important military factor, as has been demonstrated in the present war. It is highly improbable, because of its extreme economic necessity, that the government will commandeer privately owned automobiles for military purposes. The government without a doubt will be a big buyer of specially equipped automobiles. This, with the inadequate production to meet present business requirements and our increased foreign business, cannot but force the automobile industry to its utmost capacity.

G. L. Willman, assistant general sales manager Studebaker Corporation of America, South Bend, Ind.:

In the writer's opinion the war will improve general business because naturally the manufacturing activity contingent upon war preparations will promote the interests of labor and sustain a constant demand for raw materials of all kinds.

It will greatly increase the demand for agricultural products and foodstuffs. The farmer will probably be more prosperous than ever before. The demand for quick and modern transportation will also materially increase the demand for automobiles.

Scrap-heap the "pleasure car." That "ain't it no mo.'" It's a "passenger car," if the later and more accurately descriptive appellation is to be used. There are 250,000 commercial travelers alone who employ the erstwhile "pleasure car" in their business.

A. E. Chamberlain, sales manager Packard Motor Car Co., Detroit:

The impetus which the great war crisis has given to intensive farming will promote the prosperity of America far more than any adverse influences of the struggle can depress that prosperity. This means more grain, more of every kind of farm products. Agricultural communities will thrive, and there will be increased hauling between the country centers and the farms, and between the large cities and the farming communities. For this increased traffic, for border defense, and for other purposes, there will be an increased demand for the motor car.

All of the war activities are interlocking. Everyone in every line of productive endeavor is touched by them in some way. Big business cannot take a contract for a million pounds of bacon or a half million tents without little business having its part to do in the supplying of the order.

No doubt it is natural that the first feeling on the outbreak of a great war is one of uncertainty. But when we have had time to survey the strength that is in our prosperity, that uncertainty gives way to a returning confidence that is stronger than ever. That famous quotation from the wisdom of the late J. Pierpont Morgan carries even more force today: "Nobody can afford to be a bear on America!"

A. R. Erskine, president of the Studebaker Corporation, Detroit:

A state of war always stimulates an active demand for the products of the mines, fields and factories, and the United States has felt this demand from foreign countries for the past three years to an extensive degree. The entry of the United States into the war simply increases this demand, and consequently large increases in prices have ensued for all agricultural products, livestock and food supply.

Our plants at Detroit, South Bend and Walkerville are operated at capacity, and

we are selling our output as fast as it can be shipped. We believe our business for 1917 will be larger than that of last year. This is no time for any man to feel pessimistic. The great resources of the United States, its energy and power are being employed in the war, and large expenditures must ensue, which in themselves mean prosperity for our people.

Charles L. F. Wieber, president Baker R. & L. Co., Cleveland:

If this country holds its own we think it will be doing good. So far the war has not injured our business—in fact, orders have been coming in as good as at any time in the past. If, however, labor and material continue to advance we believe it will force us to advance the price of our cars to such an extent that conservative people will defer placing orders.

H. P. Branstetter, Kissel Motor Car Co., Hartford, Mis.:

There seems to be no lessening of the demand for automobiles despite the fact that the country is in war. This is the strongest possible proof that the American people no longer look upon the motor car as an extravagance. They have learned from experience that economy of time is economy of money, and that a reliable car adds many minutes to the productive hours of the day. If the nearly three million automobiles of the country were to be mobilized and scientifically assigned to work we could undoubtedly get along without the railroads.

Peter Steffensen, sales manager Seal-Tite Piston Ring Company, Inc., Minneapolis:

It is our opinion that, on the whole, the war will tend to improve rather than injure general business. It will no doubt injure some lines, but improve others more than enough to offset this. This we believe will also prove true of the automobile business. While there may be some reduction in the purchase of passenger automobiles, the demand for commercial cars will more than make up for this.

John L. Dawes, president The Dawes Electric Sign & Mfg. Co., Pittsburgh, Pa.:

We do not think the war will injure our business in any way.

Auto Parts Co., St. Louis:

The war will improve both general and the auto business.

### Automotive Electric Association Formed.

An organization of manufacturers of automotive electric accessories was formed at Atlantic City, New Jersey, Monday, April 16th, 1917. This new organization will be known as the Automotive Electric Association. Among its members are the largest and best-known manufacturers in this line.

The purposes of the organization are to improve and develop this branch of automotive electric accessories' business through standardization and by friendly interchange of experience with reference to design and manufacture.

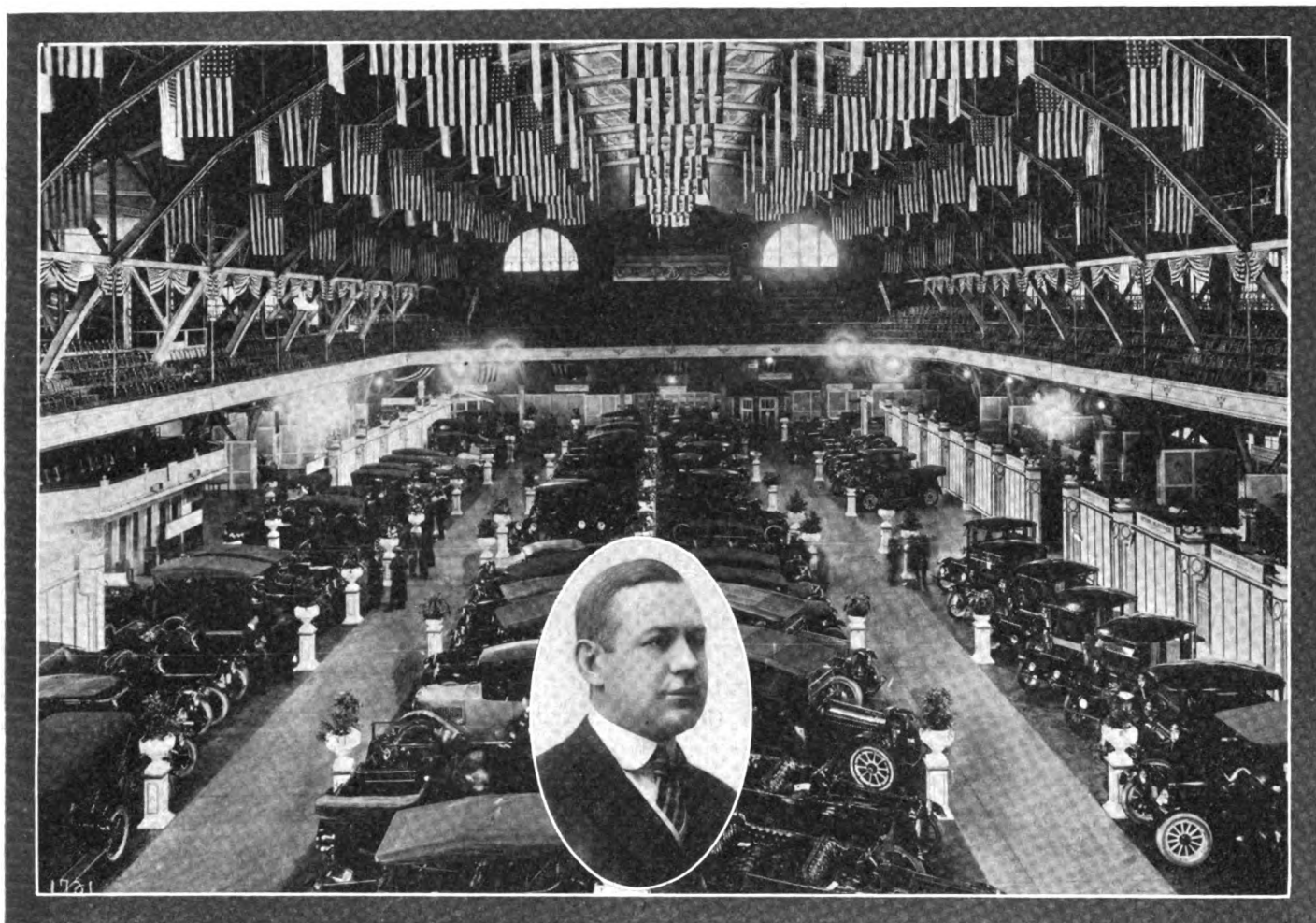
The following officers were elected at this meeting: G. Brewer Griffin, president, Pittsburgh; C. O. Mininger, vice-president, Toledo; G. S. Cole, secretary, Cleveland; C. L. Amos, treasurer, Syracuse.

The next meeting of the association will be held at Hot Springs, Va., May 17, 18 and 19.

### Cole Prices Advanced.

Cole Motor Car Co., Indianapolis, Ind., has increased prices to \$1,795 on its touring car and Tuxedo roadster and to \$2,395 on its Toursedan and Tourcoupe.

# Great Central Market Used Car Show



Interior of the Great Coliseum in which Presidents of the United States are nominated. Show Manager Thomas P. Convey in the oval.

**A**N assured success after the first two days, Chicago's first "Great Central Market Used Auto Show," for it has thus been christened, has entrenched itself on both the trade and the public, and from every standpoint it has been voted a feature that should not only become an annual, but rather a semi-annual, affair in the "I Will" city.

Opening on Saturday, May 5, the show brought out large crowds which, while not quite as large as the National Auto Show, proved to those behind the show that it was a popular idea with the man who is looking for reliable values in a second-hand car. The fact that the best of the machines in the city could be found under one roof seemed to appeal to the buyers, who otherwise would have been chasing all over automobile row trying to find the bargain that suited fancy as well as pocket book.

The show opened with practically every standard car represented by either the manufacturer's branch or distributor, and none but firms of the highest standing in the trade were allowed to exhibit. The fact that the Chicago Automobile Trade Association was behind the show was of the greatest importance and assured the public

that it was being conducted along the proper lines.

All cars were forced to pass the inspection of the Committee on Mechanical Inspection and Appraisal, and no car that did not pass the test was allowed to enter the Coliseum. Each one was labeled with a tag sealed to the radiator and signed by at least three of the examining committee. If a car failed at the first inspection, it was given one more chance, and if it was not passed at the second trial, it was ruled out. Attention was given to the smallest details, from magneto to side curtains, etc., and more than 700 cars were examined before the show opened. During the week other models, fresh from the machine and paint shops were inspected by the committee. All dealers took more or less pride in the polishing of their machines on exhibit and the displays were unusually attractive.

## Surprisingly Big Sale of Cars.

During the first day \$12,000 worth of cars were sold and, as each car was sold, it was given an "Out" tag and these were removed at the supper hour or before the opening in the morning. Other cars took the places of the ones sold, and in this way the dealers found it possible to have a new

display every day. Just \$34,350 worth were sold on Sunday night, when the dealers settled down to do a big business for the rest of the week. All were more or less elated at the success of the show and one of the exhibitors, one who had not favored the show at the start, had made the most sales up to Sunday night and was lauding the show and demanding that it be held twice yearly.

Much credit was given to the way in which Manager Thomas P. Convey handled the preliminary features of the show and his efforts which resulted in making the affair such a big success from the start. His previous experience with big affairs of this kind was of great value to the trade association and saved them from many pitfalls.

The decorations were excellently arranged. The main floor booths were done in white and gold, and the overhead hangings were hundreds of American flags that gave a touch of the patriotic to the exhibition. Many out of town dealers were on hand the opening day looking for bargains in used cars and some came from as far away as Mississippi.

The social program of the week included

(Continued on page 21.)



# War's Effect on Auto Trade

## Automobile Manufacturers and Allied Trades Taking On Contracts for Army and Navy Material—Government Orders Will Have Right of Way.

**I**T IS too early in the year to quote figures on the effect of the war in the automobile business.

Monthly and quarterly reports uniformly show an increase in the value of the output. In many cases this increase runs to more than fifty per cent but in nearly every one of these cases the concern is a well-managed, new one. Counting only the automobile concerns of three full years' existence, it appears their total product will increase at least twenty per cent unless some entirely unexpected complication arises.

About the only possibility of a decrease in the total automobile output is that the government will commandeer some of the plants. All of them have been offered freely to the government, but there is no immediate prospect of any change other than turning the output into trucks rather than pleasure cars. This will make little or no difference in the value of the output, as the government either will pay regular distributors' prices or 10 per cent profit over actual costs.

Many factories will take on munitions contracts but in general these will not interfere materially with the regular output of cars.

Not a factory is on record as contemplating a lessened output and not one is figuring on lower net earnings. The proffer of plants to the government has been met half way with the statement that the offers may be accepted but that in the meantime the government will be satisfied if its contracts are made at the same figures as the most favored customers.

\* \* \*

Complete lists of all machinery of all automobile companies in the United States are in the hands of government officials. The use of all such machines, whether or not they are needed in regular work, has been offered the government on any terms desired. In some cases contracts are made and in others the manufacturers are allowed 10 per cent over costs. There is a decided loss to the owners if results are compared with the use of the machines on regular work, but patriotism balances the scales. Press censorship prevents publication of the names of plants making munitions but all are under guard. Akron, Ohio, with its large rubber factories, is practically under the control of the army.

\* \* \*

Willys-Overland Co. is filling a sub-contract for 4,500 Curtiss aero motors for the government, the original contract being to the Curtiss Aeroplane Co. The

**Editor's Note.**—The immediate effect of the war in the automobile trade is a flood of new and profitable contracts. All war orders are considered rush orders, the manufacturers giving them right of way. On orders direct from the government, profit is not considered other than a 10 per cent advance on cost, government officials to compute the costs. Practically all the automobile plants have been offered for war purposes on any terms dictated by the government.

contract will not interfere with Overland car production.

\* \* \*

Packard Motor Car Co. has materially increased its truck output, taking care of a large government contract in addition to its regular business.

\* \* \*

All government advertising during the war will be in charge of the National Advertising Advisory Board. President Ford of the Saxon Motor Co. is a member.

\* \* \*

One of the most valuable war aids to the government is the Society of Automotive Engineers. This organization has enlisted for the war, its first move being to offer itself as a body and individually for government service. It also has enrolled twenty-six noted speed merchants in the aviation corps, men like Palma, Rickenbacher, Boyer, Chandler, Vail and Fontaine being the first to sign. Among other things the S. A. E. will help: (1) To build engines for submarine chasers through affiliation with marine engineers; (2) to build aeronautical engines through affiliation with aeronautical engineers; (3) to build motor convoys and transports; (4) to man them if necessary.

\* \* \*

A valuable object lesson in transportation was that of the Motor Truck Club of America. A New York city regiment was ordered to report at a point sixty-four miles away. The order was given Saturday afternoon. Sunday morning, sixteen trucks were loaded and all of them arrived at the destination before 8 p. m. The Motor Truck Club is a volunteer organization of truck owners and dealers.

\* \* \*

A survey of the Michigan truck factories shows they are capable of turning out about 250 army trucks per day. None of them has a supply on hand except such as has been caused by freight congestion.

The government has notified each truck factory to hold itself in readiness to take up war orders exclusively and each has responded favorably. In no case will any automobile concern charge the government more than regular prices. In many cases these prices will be materially lessened in government business.

\* \* \*

Ford car owners in New York City are organizing a Ford machine gun corps, each machine being equipped to carry a rapid fire gun. General Wood and Secretary Baker highly approve the plan.

\* \* \*

Motor trucks are as essential as ammunition to the conduct of the European war. In the first German drive they saved Paris from almost certain capture. The whole scheme of fighting would collapse in a day without efficient truck transportation. The United States now has 2,300 trucks which have done good work on the Mexican border. Within thirty days it would be possible for our factories to turn out a thousand trucks per day. There is no danger of a lack of trucks. The danger is in lack of good roads. European war specifications call for thirty-mile-an-hour trucks. Our specifications call for a higher-powered engine giving an average speed of fourteen miles per hour. The difference is one of roads. Back of the battle lines in Europe and extending in all directions are surfaced roads the equal of our boulevards. Anywhere off our boulevards are country roads which might be quagmires at the crucial time; bringing a truck transport service to an abrupt halt. It takes twenty-four trucks to supply one of the big modern guns and the first work behind the battle lines is to build roads that will stand the hardest kind of truck service. Truck service has come to stay wherever there are adequate roads. At present, a bare ten per cent of our roads are adequate to ordinary truck service in time of peace. All of which more than justifies the contemplated expenditure this year of \$250,000,000 in road work.

\* \* \*

Because of the war, France, India and Holland have prohibited the importation of automobiles. In each case, the shortage of gasoline was the determining factor. In the seven months to March 1, France bought 4,328 American cars and trucks.

\* \* \*

Maxwell Motor Co., Detroit, Mich., sold 19,000 cars for the first quarter of 1917, against 12,032 for the first quarter of 1916.

The company figures on paying regular dividends of \$3,000,000, about \$600,000 government tax and having about \$2,000,000 to add to its surplus account. It will do considerable business for the government, but this will make little difference in the financial statement, the government not demanding anything less than a profit of 10 per cent.

\* \* \*

Kansas and Missouri have appointed commissions whose main duty it will be to see that as many tractors as possible are working full time in farm work. Bankers have joined the movement with an offer to finance the sale of tractors and the government is lending a hand. Before the tractor demand is supplied it is considered probable the government will be compelled to accept offers of the automobile companies and divert the necessary amount of work to a tractor rather than a pleasure car output.

\* \* \*

The war has had the direct effect of nearly doubling the imports of rubber. Since early in 1915, rubber factories in the United States have had their orders reduced nearly a half. With our becoming an ally instead of a neutral, England is allowing full orders to be shipped.

### Idaho's New Auto Licenses.

Idaho has provided a licensing system by which automobiles are charged by weight. Cars of 2,000 pounds or less pay \$15; 2,000 to 3,000, \$20; 3,000 to 4,000, \$30 and over 4,000, \$40. One-third of the fee is deducted when a car has passed its fifth year of service. Dealers' licenses are \$35 for handling one make of car and \$25 for each additional make handled.

### Great Central Market Used Car Show.

(Continued from page 19.)

the entertainment of exhibitors and guests, as follows: Motor Pals, May 7; Chicago Automobile Club, May 8; Chicago Motor Club and Chicago Association of Commerce, May 9; Auto Service Manager's Association, May 10; Chicago Garage Owners' Association, May 11; Chicago Automobile Trade Association, May 12.

The following committees were in charge of affairs show week:

#### Entertainment Committee.

Arthur Jones, Arthur Jones Electric Co., chairman; H. P. Branstetter, Kissel Kar Co.; O. G. Temme, Triple Action Spring Co.; E. E. Esch, Simplex Automobile Co.; Harry Newman, Harry Newman Co.; C. R. Hall, Coliseum Co.; D. E. Whipple, Detroit Electric Car Co.

#### Mechanical Inspection and Appraisal Committee.

Eugene Silver, Cole Motor Co., chairman; F. E. Edwards, American Automobile Association; E. J. Krimske, Chicago Auto Sales Co.; W. H. Hunt, Simmons Motor Car Co.; A. D. Mortimer, Haynes Motor Car Co.; H. M. Dally, Illinois Motors, Inc.; A. D. Marine, Maxwell Motor Sales Corp.; William Georgian, L. Markle Company; C. W. Williams, Leo Motor Car Co.; H. S. Ross, Packard Motor Car Co.; A. Wikoff, Louis Geyler Co.; Arthur Bunker, Bird-Sykes Co.; H. P. Branstetter, Kissel Kar Co.

## Garageman or Implement Dealer

THE illustration here presented is typical of the implement dealers who are getting into the automobile business in the smaller towns as sellers of cars, tires, accessories, gasoline, etc., and last, but not least, tractors.

The garageman's chief competitor is the implement dealer, aside from the exclusive car sales agent who maintains an office and demonstration car. If the garageman neglects to take on a car agency, the implement man is by this act of omission

field. He deals exclusively with farmers and learns their wants before anyone else learns them. But it is more logical for the garageman to have and hold the tractor business because he is a mechanic and must repair tractors, making it desirable for him to gain the profit on the original sale and originally pass upon the product from the standpoint of a service and repair expert. But this business the *garageman must fight for*, as it originally drifts into the hands of the implement man.

This article is not intended to be wholly



given an opportunity for extending his business that could not otherwise be his.

The natural expansion of a garage is into merchandising, first, of the car, then of all of the accessories which make up the car's equipment and operation, or vice versa. If the garageman fails to live up to his opportunities the foundation of his business is undermined by the entrance of others into his field.

It is natural for the implement dealer to first obtain a foothold in the tractor

a preachment, but its recommendations are based upon facts developed from a comparison of lists of garagemen made up a year ago and made up this year, which show that, year after year, the garage business is broadening its base, with the dealer element in the trade showing an increase in twelve months of nearly 35 per cent. In some localities the garage trade shows a 100 per cent dealership status whereas three years ago it was 100 per cent exclusive garage service.

#### Advertising Committee.

Harry Newman, Harry Newman Co., chairman; S. D. Porter, Dearborn Truck Co.; H. E. Doty, Haynes Motor Car Co.; L. K. Cooper, Maxwell Motor Sales Corp.; Paul A. Frank, Owen Magnetic Co.; Belmont Walters, Schillo Motor Sales Co.; Ralph Temple, Ralph Temple Automobile Co.; H. P. Sallman, Chicago Allen Co.; Thos. J. Hay, Thos. J. Hay, Inc.; B. G. Sykes, Bird-Sykes Co.; H. P. Branstetter, Kissel Kar Co.; A. Wikoff, Louis Geyler Co.; J. R. Buck, Hughey Motor Car Co.; J. H. McDuffee, Overland Motor Co.; Eugene Silver, Cole Motor Co.; S. M. Busby, Louis Geyler Co.

#### Great Central Market Used Automobile Show Committee.

Erwin Greer, chairman; H. Paulman, and D. E. Whipple.

Especial praise is due Eugene Silver for his excellent work in directing the inspection work and Harry Newman in putting his well-known punch and pep in the show advertising handled by his committee.

The exhibits are as follows:

#### Automobiles.

Anderson Elec. Car Co., Detroit Electric; Bird-Sykes Co., Paige; Branstetter H. P.; KisselKar; Chevrolet Motor Co., Chevrolet; Chicago Allen Co., Allen; Cole Motor Co., Cole; Commercial Truckmobile Co., Truc-

mobile; Dashiell Motor Co., Dodge; Dearborn Truck Co., Dearborn Truck; Franklin Motor Co., Franklin; Louis Geyler Co., Hudson; Erwin Greer Auto Co., Ford; Thos. J. Hay, Inc., Chandler; Haynes Motor Car Co., Haynes; Hughey Motor Co., Peerless; Illinois Motor Co., Velle; King Motor Car Co., King; Emil J. Krimsky, Buick; Jos. Levey Motor Co., Chalmers; L. Markle Co., Studebaker; Marmon-Chicago Co., Marmon; Maxfer Truck Co., Maxfer Truck; Maxwell Motor Car Co., Maxwell; Mitchell Auto Co., Mitchell; Moline Auto Co., Moline-Knight; Harry Newman Co., Hal-Twelve; Overland Motor Car Co., Overland; Owen Magnetic Co., Owen-Magnetic; Packard Motor Car Co., Packard; H. Paulman & Co., Pierce Arrow; Rauch & Lang Co., Baker Electric; Reo Motor Car Co., Reo; Schillo Motor Sales Co., Hupmobile; Simmons Motor Car Co., Grant Six; Smith Form-a-Truck Co., Form-a-Truck; Ralph Temple Co., Empire; Tennant Oakland Co., Oakland; Winton Co., Winton.

#### Accessories.

Ahlberg Bearing Co., American Auto Top Co., Auto Cape Top Co., Auto Needs Co., Carlsen-Williams Co., Chicago Pneumatic Tool Co., Chicago Tire Co., Cochran Wrench Co., Crowe Elkhart Co., Elec. Tire Treading Co., Fowler Lamp Co., Harris Bros., Hydrox Co., S. C. Johnson Sons Co., Knickerbocker Case Co., Motor Salvage Co., National Portable Garage Co., Perry Auto Lock Co., Post Machine Co., Sexton Oil Co., Simpson Mfg. Co., S. & S. Elec. Co., Triple Action Spring Co., Warner-Lenz Co.

# How Frelingheusen Won Out

## Beginnings of a Method of Using His Personality Which Doubled the Business of an Iowa Garageman and Auto Dealer

**M**R. FRELINGHEUSEN'S first answer to his long-hand letters came from a banker named Russel. It was a telephone message and Mr. Frelingheusen was surprised at the cordial invitation to drop in at the bank; until he remembered he had once started up the banker's car when it was stalled in a mud hole.

"I'll be there in five minutes," was Mr. Frelingheusen's answer to the invitation.

And on the way, Mr. Frelingheusen made one of the most sensible decisions of his life. He figured that his record was good and that his financial standing was at least fair. He hadn't a dollar of extra money to put into a larger garage but he was becoming crowded for room in his present quarters. Frankly, he did not know what to do. But he decided that his situation was an old story to the banker and the best way was for him to make a full showing of all his affairs and to be guided by Mr. Russel's advice.

It developed at once that Mr. Russel was attracted by the statement in Mr. Frelingheusen's letter: "I want to put up a building which will be a credit to the community, but naturally want some assurance of enough added business to make it pay." As was intended when Mr. Frelingheusen wrote the long-hand letter, this statement appealed directly to Mr. Russel. He was an advocate of the city beautiful and was at the front in any movement toward making Missionville a better place in which to live.

And again Mr. Frelingheusen struck the banker's funny-bone when he said: "What I need more than anything else is your advice. I will need financial help if I build the garage I want but I don't know whether it will pay me to build. If you want to hear the whole story, I am here to tell it."

Briefly outlined, Mr. Frelingheusen had started three years before with \$2,200. To this had been added nearly \$800 from his wife's savings; a total cash investment of \$3,000.

Against this he had shop equipment worth about \$700; an automobile worth about \$1,500; about \$1,000 worth of accessories and office and garage equipment, worth about \$300. In addition he had accounts receivable of \$2,100 and a bank balance of \$213. And he owed a note of \$500 and about \$600 in accounts payable.

His total resources were \$5,813 and his net resources \$4,713. He had put \$3,000 into the business and he showed a paper profit of \$1,713 for three years' work. It

**Editor's Note.**—J. R. Frelingheusen is not his name, but he is an actual garageman. Part of his story was told in the April issue. His troubles were those of the average automobile dealer and garage owner. His success was due to the uncommon ability to learn by the experience of others.

From the beginning he had suffered no serious loss by plunging on an uncertainty, but he had reached the time when his thirty-car garage was crowded and his shop was inadequate to the repair work in sight. In spite of this increased business, his bank account at no time was large enough to pay current bills and he was paying each of two employees about as much per week as he himself drew.

Then came a friend who started him in the sale of automobiles and to a profitable increase in business by means of long-hand letters. One of these letters was to a leading banker.

struck him all of a heap that his \$1,500 automobile was the joint work of himself and friend in the past few weeks; that he had put in three years' work and was hardly a dollar ahead prior to his friend's arrival.

Exclusive of his automobile sales, the net result of which was his demonstrating machine, Mr. Frelingheusen had done about \$5,000 worth of repair work and sold about \$3,000 worth of supplies the previous year. This total really was \$7,000 instead of \$8,000, as he had used at least \$1,000 of the supplies in his repair work. In addition, he had done about \$2,500 in storage business. His pay-roll was \$74 a week and his rent, \$70 a month.

Again excluding his automobile sales, his total business for the year was \$9,500. His expenses approximately were: Pay-roll, \$3,800; rent, \$840; heat and light, \$240; insurance, \$100; replacements and new material, \$500; incidentals, \$250; personal expenses, \$1,400; rebates and allowances, \$450. This was a total of \$7,628 against \$9,500 worth of business; the difference roughly being represented by \$2,100 of accounts receivable and \$213 in bank.

When all these figures were in sight it appeared evident that Mr. Frelingheusen had been working pretty hard for his board for three years; that, excluding the last three weeks when his friend had helped him put some pep and personality into his work he had practically been doing a losing business.

And then the banker sharpened his pencil and asked to see the accounts receivable. It wasn't a good list. In fact, some of the accounts were nearly three years old and nearly \$1,000 of them were a year old. Preparing a separate list, Mr. Russel drew a line through a total of \$425.

"Better give them to a young lawyer and tell him he can have 50 per cent of all he collects," was his comment.

This brought the list down to \$1,675, of which Mr. Russel marked \$925 as good and \$750 as fair.

"Better go after that personally," said he, "and wherever you can, get notes if they don't pay cash. What you need now is money. You ought to get enough to pay your \$500 note and your \$600 of accounts payable. If you do, never again owe anyone but your bank. Put yourself on a discount basis. If your own bank won't carry you, I will. Your account may be a good one some time and there isn't any moral hazard."

Within a week, Frelingheusen collected \$800 in cash and \$600 in notes. He transferred his account to Mr. Russel's bank and had over \$1,000 on deposit. The notes were discounted for \$400 and Mr. Frelingheusen paid his \$1,100 of debts and had \$300 left on deposit. It was the climax of the happiest month he had ever had in business.

And then came the serious business of setting his house in order, beginning with the individual accounts. Mr. Russel knew nearly all Frelingheusen's customers and knew in advance that several were unprofitable though two at least Mr. Frelingheusen considered as the best he had. It developed that a Mr. Adsit had paid \$300 during the year and owed \$125. Under a rebate and allowance account he had received credits of \$160, nearly half of which had been taken off his account for no reason except that Mr. Frelingheusen needed cash and had reduced a bill \$75 to induce Adsit to pay \$300. On figuring up the separate items in the account it was found there was not over \$50 profit in it, not including, at least, twenty hours work by Mr. Frelingheusen himself. In addition, \$85 of charges had been marked off; these including such items as the return of a new set of tires for an over-size set, the exchange showing a loss of over \$20 and the return of several used accessories which had been replaced by improvements. All the trades showed actual losses.

"Just make up your mind," said Mr. Russel, "that Adsit is a better salesman

than you are. The only thing to do is to make straight sales to him, with settlement in full at the end of each month. Don't make a trade with him or anyone else unless you know just where you can sell the traded article for more money than you allowed. Go over to Adsit's store, collect the \$125 he owes and in a friendly way show him just how you came out in dealing with him. It will tickle him to learn he got the better of you and I think you can make a good customer of him."

Each account was gone over in the same way, the proof being shown Mr. Frelingheusen that his supposedly good customers sometimes were bad ones and that his really profitable accounts were the smaller ones.

"And right there is one of the commonest mistakes in business," said Mr. Russel. "The dealer is afraid to offend his supposedly good customers and that fear makes him turn a profitable account into a losing one. Make every transaction stand on its own bottom. Each must show its own profit. No reasonable man will ask you to do work or sell an article at a loss. He expects you to make a profit. That's what you are in business for."

The first six weeks following his first talk with the banker were the most productive of his entire business career. He made some kind of settlement with every account over thirty days old and reduced his accounts receivable to less than \$400. He induced many of his good customers to pay cash for everything except storage and put on an absolutely cash basis all dealings with sixteen of his old customers. Some of the sixteen took their unprofitable trade elsewhere, but that was a distinct gain to Frelingheusen.

#### Profit and Loss Account.

On the first of the following month he and Mr. Russel worked out a profit and loss account which showed his standing to be as follows:

ASSETS.	
Machines, tools, etc.....	\$ 625.00
Accessories .....	745.00
Furniture and fixtures.....	275.00
Demonstration car .....	1,350.00
Accounts receivable .....	665.00
Cash .....	621.00
<b>Total .....</b>	<b>\$4,281.00</b>
LIABILITIES.	
Accounts payable .....	\$ 121.00
Net worth, to balance.....	4,160.00
<b>Total .....</b>	<b>\$4,281.00</b>

In spite of the fact that depreciation had been written off each inventory item, the statement was about as good as the previous month. The conclusion was plain, however, that for three years' work Mr. Frelingheusen had assets of only \$1,100 more than he had put into the business and that, included in those assets was a car valued at \$1,350. By depreciating his

inventory his work for nearly three years showed a loss of about \$250.

The one bright spot in the whole statement was that he owned a car worth \$1,350 as the result of a year or two of preliminary work and about a month of actual selling by himself and his friend.

That was the starting point for the banker. It developed that Mr. Frelingheusen was not a good closer in selling. His friend had done nearly all of that work. Mr. Frelingheusen was a good demonstrator and convincing talker but lacked the final punch to put over the sale. That was a quality his friend, Mr. Judson, had and Judson now was on his way back to Missionville from his overland trip to the coast.

#### Arranges for Extra Time.

Mr. Russel suggested that Mr. Frelingheusen rearrange matters in his garage so as to give him extra time. This was done by making a contract with his two machinists to take over the repair work under their own firm name, paying him rent for the space occupied; an agreed amount for wear and tear on machinery, this amount to be used in buying new tools when needed and a percentage on the gross amount of work done.

As an afterthought, and a fortunate one, a separate contract was made by which the machinists and the helper were given 10 per cent of all the storage receipts. In return, the helper was to be in constant charge. He was not to do any machine work, it being understood he was to appear more as a salesman, with clean hands and apparel.

It was astonishing how the physical appearance of the garage improved and how the receipts increased. Mr. Frelingheusen found that instead of three employees whose interest in the garage ceased when the whistle blew, he had added three salesmen, each of whom made constant efforts to increase the business. All three employees were good men but they needed the incentive of the little old 10 per cent commission. The machinists did their work much faster and if possible they did it better.

The garage supposedly could hold thirty cars but always seemed full with twenty-two. A sensible scheme was adopted by which each car was given a certain space. There were only twenty-eight of these spaces but before the end of the first month of the new arrangement, every space was filled.

In the meantime there were many talks between Mr. Frelingheusen and Mr. Russel and several long-headed plans were adopted to learn what chance there would be for profit in a larger garage. One of these plans was to learn whether the \$12 storage rate could be raised to \$15 or more. The three employees joined willingly in this test by added service which involved mainly the appearance of the cars by the use of polishing cloths; by a more

careful inspection of the cars, which added materially to the small repair and accessory business and by the cheerful attention to patrons which inevitably comes with a financial interest.

The end of the first full month of the new arrangement was a revelation. Another inventory was taken and the financial statement was as follows:

ASSETS.	
Machines, tools, etc.....	\$ 625.00
Accessories .....	815.00
Furniture and fixtures.....	275.00
Demonstrations car.....	1,350.00
Accounts receivable.....	435.00
Cash .....	1,118.00
	<b>\$4,618.00</b>
LIABILITIES.	
Accounts payable.....	\$ 19.50
Net worth, to balance.....	4,598.50
	<b>\$4,618.00</b>

There was no mistake about it. Frelingheusen was \$438 better off than at the end of the previous month. In addition, he had put in nearly \$100 in equipment which he charged to operating expense instead of adding it to his inventory. Aside from the month in which he and Mr. Judson had sold enough cars to pay for his demonstrating machine, it was the most prosperous month in the garage business; apparently one of only a half dozen which showed any profit.

Mr. Judson was due on his return trip in a few weeks and Mr. Russel and Mr. Frelingheusen decided it would be the best plan to take a plunge into the automobile selling game.

#### A Clean-Up Week Works Fine.

As the first step in this direction came a clean-up week which made an apparently new place of business of the Quality Garage. New windows were put in the combined office and salesroom, the front and interior were painted and even the repair-shop had a thorough housecleaning. This cost over \$400, but it fairly transformed the garage. Every customer made complimentary remarks, especially when the cap-sheaf was added by hiring an office girl to take care of the books and operate the typewriter. These changes absorbed all the profit of the previous month and added \$15 per week to the pay roll. But the business could stand it and the expense was necessary to put the plant in shape to learn whether a larger garage would pay.

Just at this time came the chance of accepting another agency for a popular and low-priced car. And Mr. Frelingheusen closed the deal at once. He needed financing now to order cars economically, but Mr. Russel told him to go ahead and he would let him have the money at 6 per cent or less. It was almost a heart-breaking strain when he ordered a car of each of his models and became conscious.



that he had obligated himself for more than he was worth.

He could not display more than two cars in his show room and would have to store the remainder, but here Mr. Russel again came to his rescue. A corner store room a few doors from the garage was vacant and Mr. Frelingheusen was able to rent it for a month for \$50. Pending Mr. Judson's arrival he had the office girl write letters to over 250 prospects, dating them ahead and having them all ready to mail on the day the cars would arrive. Then he joined forces with his wife and new office girl in making the new store room attractive. It was thoroughly cleaned, patriotic bunting was festooned on the walls and potted plants filled in the odd nooks. A run-way for the cars through an enlarged back door was added and everything was ready for the cars.

**My dear \_\_\_\_\_**

**This is a special invitation to you to attend the First Automobile Show in Missionville.**

**The show of course is open to the public but I want you to be there because I believe you will want to buy one of the cars.**

**The show will be in the Barnes store room three doors south of the Quality Garage. I would hold it in the garage but there isn't room. One of the objects of the Show is to prove whether it will pay me to build a larger garage. If it does it will be big enough for the business and fine enough to match Missionville's progress in other directions.**

**The opening date is June 16.**

**Will you be there—and bring a friend or two?**

**Very truly yours,**

**J. R. FRELINGHEUSEN.**

It was an anxious time for Mr. Frelingheusen but the sky was cleared by the arrival of Mr. Judson a few days before the cars were due. He arranged for a public invitation through a page spread in the two weekly papers and planned a selling campaign for the store room with the avowed intention of selling the seven machines—and more. Mr. Frelingheusen was to be the "glad-hander," meeting everyone at the door and starting a sales talk. He was to make the sale if the prospect was ripe but to pass him on to Mr. Judson if other prospects were in sight.

And everything was ready the day the cars reached Missionville.

### **A Prospect That Didn't Look It— "Dot's a Nice Car, Yes."**

Thomas M. Ray, of the All Year Motor Car Company, Denver, which markets KisselKars in Colorado, reports the following amusing yet sales-illuminating incident:

A seedy looking Swede came into Ray's place at Denver and stood looking at the most expensive KisselKar in the place, a special show job with "fixins" that brought the price close to \$2,500.

Tom thought he wanted a job as a washer or was just an ordinary "rubber-neck," but walked up to him and inquired if there was anything he could do.

"Dot's a nice car," he replied, as he pointed toward the large, shiny boat. It was a dull time of the day and Ray decided to practice up on the Swede.

"Yes, dot's a nice car," he would reply

### **Cheap Tactics That Should Be Discouraged—Bound to React.**

**By J. Ernest Stephens, People's Garage, Marion, Ind.**

Why do manufacturers of certain articles furnish the dealers with price lists? Is it to help the dealer to sell his goods by showing price lists to customers and then discounting prices several % because he is a good customer, then asking him not to tell what he paid, thus making believe that he is the only favored customer—and then serve the next customer the same way? Or is it to make the customer think that he is getting the goods at nearly what it cost the dealer?

It is always easier to sell an article if the fellow thinks he is getting it at cost or nearly so. I am greatly in favor of the standard price and sticking to it. If I have to cut prices on accessories or labor to get the business I'll have to quit. If our square dealings can't get business, we won't have any.

Some time ago we purchased of \_\_\_\_\_ company twenty-five barrels of their oil through their representative, Mr. \_\_\_\_\_, at 30 and 5 off list. He was to make us his exclusive agents for Marion, but near the same time he sold a car lot of the same oil to the Wigger Buggy & Harness Co. and also a shipment to the Goodyear Service Station at 40 and 5 off.

Now the point is, when we try to sell five gallons or a barrel of oil at the list price, our customers laugh and say they can buy oil at the other places 20 cents per gallon cheaper.

When we purchased the oil Mr. \_\_\_\_\_ impressed it very strongly on our minds that we were to sell at the list price absolutely, and that if he knew of any one selling oil under list he would no longer call upon them.

The list of a five-gallon can of this oil is seventy-five cents and I saw a bill for a can sold to Thomas Milling Co. by Wigger B. & H. Co. for fifty-five cents. I do not know that Mr. \_\_\_\_\_ or the company know of this, but such things as this are a great menace to dealers who are trying to do the square thing and selling according to the prices set by the manufacturers.

I do not think it shows much brotherly love for one to try to undermine another in such a way. Simply because he buys in larger quantities and cheaper. It makes no excuse in my estimation for him to try to cut the others throats. Do you?

### **Editor's Comment.**

Such cheap and dishonest tactics as are described by Bro. Stephens are sure to bring down upon the heads of those employing them certain if not swift punishment, whether they are manufacturers, salesmen or dealers. Those who stand for fair and honest prices for fair and honest

goods and services always win out in the long run.

This case should be reported to the manufacturing concern and, if it is doing business in a modern, upright manner, the condition will soon be remedied; if the reverse is the outcome, the facts, with names and dates, may be published in the *AMERICAN GARAGE AND AUTO DEALER* for the protection of the retail trade. It is certain that honest retailers do not knowingly support and encourage firms guilty of any form of double-dealing or permit their salesmen to employ such methods as are here described.

### Cross-Country Touring — A Few Horn Signals from Walt Mason.

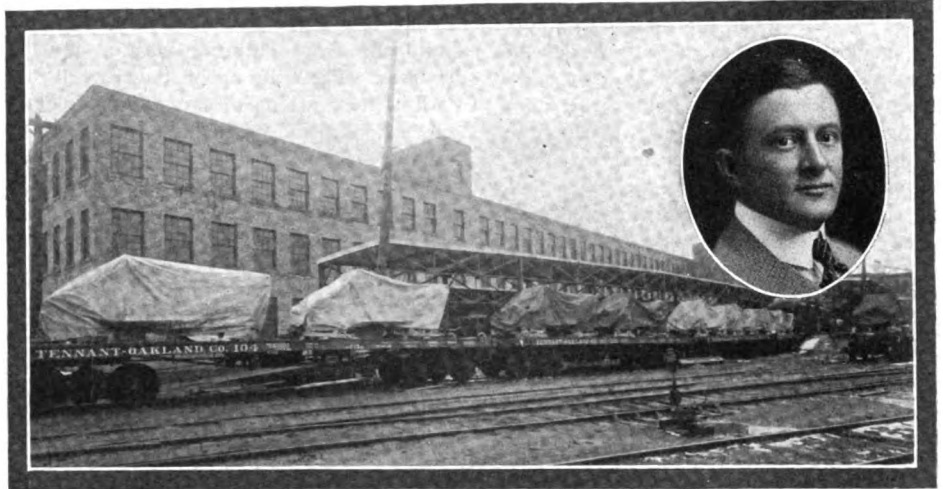
Several million American families are buying automobiles this spring, and thousands of them contemplate extended tours during the summer months. Unless, by reason of the war, our cars are commandeered by the government, *there will be more touring this summer than ever before.*

Already the great mountain resorts are being spruced up for the summer business. "Seeing America first" is more than a catchword nowadays, since European travel is too much like a Fourth of July celebration. *Multitudes who used to spend their vacations and money over there are reduced to discovering America*, and they find, to their surprise, that they enjoy it.

The man who goes touring with his folks and who can't afford a chauffeur should see that two or three members of his party know how to handle the car. Last summer I was traveling in Colorado. I was driving along a lonely road when I came to a party in distress. There were the able and accomplished father and the dignified mother and two or three grown-up girls. Their car was at the side of the road and they were all sitting around, the picture of misery and disgust. A young man was rolling around on the ground sick with the colic. He was their hired driver, and he had been enjoying the disease for hours, and was clearly out of commission. Nobody in the party outside of the invalid knew anything about a car.

The driver of one's car may have a fit at any moment, or he may be struck by lightning. In which case it is a great blessing to have a passenger who can take the helm and run the car to the nearest town where there is a doctor or coroner. Moreover, it conduces to the comfort and good temper of all concerned if the passengers can take turns driving. The inexperienced motorist finds it fun to drive for fifty or a hundred miles. But after that it becomes hard work, and he grows nervous, and nobody need be surprised if he runs the boat over the side of a bridge or through a board fence. When the inexperienced driver feels himself growing nervous it is a good time to quit and let somebody else assume the reins of government.

## Newest Stunt in Auto Transportation



The Tennant Oakland Co., auto dealers in Chicago automobile row, are having a spring rush of orders for cars and have hit upon a new scheme of facilitating deliveries. They have organized the Tennant Oakland Transportation Line and load Oakland's on their own flat cars at the Pontiac works, as shown in the picture. The Line has 55 cars and delivers 165

Oakland Sensible Sixes in Chicago weekly. In the oval is a good likeness of J. G. Tennant, treasurer of the Tennant Oakland Co. and is, with his brother, W. G., a founder of the Tennant Oakland Transportation Line. The idea of owning railroad cars is common in the packing, fruit, poultry and other industries but is something entirely new in the automobile industry.

Everybody who is starting on a tour should make up his mind to be a good sport and accept in the right spirit whatever comes. He should try to consider himself an adventurer, going forth to encounter strange hazards, and determined to prove equal to any of them.

If all the members of the party are good sports, determined to make the best of everything, these accidents are regarded with amusement, and they don't spoil the pleasure of the trip for a minute. But if there is one grouch in the party everybody will soon be infected with discontent and the whole crowd will become homesick.

The man who has his first car need not be a mechanic. *In fact, it is a poor policy to try to keep your own car in order unless you really have a knowledge of complicated machinery. It is easy for a botch workman to muss things up so that it will cost a lot of money to readjust them.* But the owner should know a few things about his boat. He should have a rudimentary knowledge of the ignition system and the cooling system, and he should be able to distinguish the fan from the steering wheel. If he is primed with such simple information it occasionally happens that he can diagnose the ailment, when his car isn't working right, and do a first-aid-to-the-injured stunt.

### Briscoe Eight Advanced.

Briscoe Motor Corp., Jackson, Mich., has advanced the price of its eight-cylinder car to \$1,025, f. o. b. Jackson.

### Goodrich Prices Advanced.

B. F. Goodrich Rubber Co., Akron, Ohio, has advanced nearly all tire and tube prices. The 30x3 casing now is \$11.65 against \$11.35; 36x4½ is \$36.25 against \$34.20, and corresponding advances on intermediate sizes except the 32x3½, which remains at \$17.70. Advances on tubes range from five cents on the 30x3 to forty-five cents on the 36x4½, the price on the latter now being \$6.05.

### Kissel Kar Advances.

Kissel Motor Car Co., Hartford, Wis., announces an advance in prices as follows: Touring Sedan, \$1,735; Hundred Point Six, \$1,295; De Luxe 7-pass., \$1,750. The new twelve will be introduced at \$2,250 for regular touring body and \$2,650 for the All-Year Sedan.

### Jordan Price Advances.

Jordan Motor Car Co., Cleveland, Ohio, has increased prices as follows: 7-passenger and sporting roadster, to \$1,795 and 4-passenger sport model with wire wheels, to \$1,895, f. o. b. Cleveland.

### Iowa and Illinois Lien Bills.

The Iowa garage lien bill was defeated by one vote; more organization power needed. The Illinois bill has passed the senate and is on second reading in the house; outlook for passage bright.

# An Up-to-date Downtown Garage, Chicago.

One of the most thoroughly equipped and modern garages in the city of Chicago is inside of the elevated loop on Lake street. It is known as the Lake Street Loop Garage and is owned by E. C. Larned, one of the livest men in the business.

One of the problems of every metropolitan city is downtown congestion and ordinances are being passed prohibiting the parking of cars in the streets or in other

ute garage has five. One of the illustrations shows the front entrance with a double driveway. The exits are in the rear.

All of the washing of cars is done in the basement, and the basement is reached by a runway which is also shown by one of the illustrations. While the Loop Garage is a big storage establishment and has six floors connected by elevators, it does a large and growing accessory business. The

course, when a customer's complaints and exactions are more than the traffic will bear, we politely request him or her, as the case may be, to take their business away."

Mr. Larned is a believer in organization and joined the A. A. G. O a few days after opening his garage to the public. While



The Accessory Store.

public places. Mr. Larned contends that such an ordinance would not affect the wise car owner because, if he is really wise, he has learned one important fact, namely, that the largest item of expense in connection with maintaining a car is depreciation, and when a car can be stored in an up-to-date garage for 50c a day, as it can be at the Lake Street Loop Garage, the cost is more than offset by the depreciation that parking would cause. In the language of Mr. Larned, "The customer stores his car in the Lake Street Loop Garage for nothing."



The Telautograph.

Mr. Larned has carried out a number of original ideas of his own in the construction of this garage. He believes in plenty of entrances and exits, and this up-th'-min-

larger of the illustrations shows the interior of the store and will indicate that Marshall Field's accessory department is not doing all of the downtown business by any manner of means.

Note the view of the ladies' waiting room, which indicates that this garage has its share of patronage from the fair sex; also note the show window of the salesroom with a display of tires shown.

It is Mr. Larned's policy to carry on hand every accessory and novelty known to the automobile trade. If any customer thinks of anything before Mr. Larned has thought of it, he orders it forthwith, but this does not happen very often.

In point of convenience for handling the trade, this garage claims a leading place. The establishment is equipped with a telautograph system which connects all floors and all parts of the establishment with the cashier's desk. When a customer comes for his car he or she waits in the office or waiting room while the cashier gives the order for the car to be brought down from one of the storage floors to where the customer is waiting. He or she has only to step into the car and drive away.

## Customer Always Right.

Mr. Larned has adopted for his motto the statement "The Customer is always right." He said: "We never argue with a customer. If a customer says the fender was bent when we took the car out, it was bent. What he or she says goes. We give the very limit of possible service consistent with our small margin of net profit. Of



Our Front Entrance.

he believes in a square deal for the public. he also believes in a square deal for the garagemen and realizes that the only way



Watch This Window for Latest Automobile Accessories.



View of Ladies' Waiting Room.

to get it is for garagemen to stand together.

The passing of an anti-parking ordinance by the Chicago council recently has had



The Runway.

a notable effect on business. "While we have been open but a short time, we have nearly reached capacity. Probably another month will carry us to the dead wall, and from that time on it will be a question only of selecting customers."



Incline Connecting With Basement.

Mr. Larned is a student of conditions and proposes to keep right up to the minute in supplying service and catering to



Another view.  
(Continued on page 29.)

# Live Wires in the Garage and Dealer Trade

**M. J. Laporte, Dealer, Garageman and Liveryman, Holyoke, Mass.—Public Spirited Citizen.**

**T**HE life of Mederic J. Laporte reads like a romance. He was born in Canada in 1859 and came to "The States" forty years ago and located at Gloverdale, Conn. In 1880 he moved to Holyoke, Mass., entering the express and moving business when 16 years of age on a cash capital of \$5.00. He had credit and possessed courage and stick-to-itiveness. His progress was phenomenal and in a few years his establishment was one of the most prosperous and extensive in Holyoke.

The business grew with the town and was given added impetus by the experience and training that came with the years, until Laporte became one of the leading liverymen and transfer men in New England. When the automobile industry came into being, the subject of this sketch was quick to grasp its significance and installed motor-driven vehicles for service and in quick succession added auto storage, a stock of auto accessories, tires and other supplies, and, last but not least, became a dealer in cars with the Maxwell agency as his factory connection.

Mr. Laporte dates his entrance into the garage and auto trade with 1905, when he built his present large and well-equipped salesroom and garage. While continuing his business as a horse-and-carriage liveryman and carriage repairman, he has left nothing undone to make his automobile business the most up-to-date and successful in his territory. His auto repair shop is one of the most extensive in that part of New England, his auto storage facilities are large, and his sales department includes both new and used cars, as well as accessories and supplies of every kind purchased by motorists.

Mr. Laporte has associated with him in the business his three sons and Doric Lescault. In 1908 the business was incor-



porated as the M. J. Laporte Company, with Mederic J. Laporte as president and treasurer, Mr. Lescault as secretary and M. J. Laporte, Jr., L. Alphonse Laporte, and M. Albert Laporte, directors.

As already indicated, Mr. Laporte, Sr., has never lost his love for the horse—and it will be of interest to know in this connection that one of the distinctive features of his horse livery business is a riding school, presided over by his son, M. Albert. This school is a money-maker, as are all of the other features of the Laporte business. Albert is an adept instructor, being a graduate of the famous Durnham riding school of New York city. Alphonse is an expert auto driver and has charge of all of the outside work connected with the garage, repair shop, etc., as well as the baggage transfer and carriage work with

the theaters, depots, banquets, funerals, etc. The Laporte establishment has more horse-drawn vehicles in its service than all other establishments in Holyoke combined.

Mr. Lescault is a brother of Frank Lescault, the noted auto racing man, and has charge of the entire desk service, as well as the accounting and other secretarial work of the corporation.

The concern operates 12 passenger cars, buses and trucks and 35 carriages and hacks, besides their complement of saddle horses, etc.

When asked what methods he employed to build his business, Mr. Laporte said: "Just honest every-day plugging and a determination to give values that will please and satisfy customers, coupled with good advertising."

Bro. Laporte is a public-spirited citizen and, busy as he has been all these years, has not neglected to do his duty by the state. He served four years on the Board of Aldermen of Holyoke, five years on the Park Commission and three years on the Fire Com-

mission. He has been a member of the Republican City Committee for more than twenty years and is now its chairman, and received an appointment on the High Cost Commission of the state of Massachusetts from Governor Draper five years ago, and about a month ago was again honored by an appointment to the Public Safety Committee by Governor Draper.

Mr. Laporte's business exemplifies the idea of organization and system, which permits expansion and the care of a multitude of details without drawing upon the vitality and time of the controller and director of the enterprise. It has enabled him to develop his business in all directions instead of eliminating branch after branch and concentrating on a few, thereby sacrificing volume.

If the garage should be "the department



store of the retail automobile industry," as has been aptly contended, Mr. Laporte's business under his treatment should be and is a sort of "department store of the horse and motor livery, transfer and merchandising business."



Laporte Building.

Mr. Laporte, it goes without saying, is a good organization man when it comes to his own craft. He has taken an active



Sample of the Laporte Advertising.

interest in the work of the American Association of Garage Owners (A. A. G. O.) from its inception and is now serving as its second vice-president.

### Getting After the Thieves.

The Western Automobile Trade Association, with headquarters in Denver, and Denver men as officers, has been formed. The purpose of the organization is to promote the interests of western garage owners in general and to co-operate with a national detective agency in handling burglaries, thefts and forgeries in particular. Walter S. Matthews is secretary.

# Down on the Border

## R. Blaine Jordan Builds Big Business in Texas, 68 Miles from a Railroad—Auto Fixing Beats Deer Hunting

They do things differently in Texas. It—or part of it—is a new country, and that is why in part—but another reason is that Texans are one of America's most pronounced and best types.

One of the pictures below shows the main entrance of R. Blaine Jordan & Co.'s garage, which is a building 56x100

secretary-treasurer of the company bearing his name, duly incorporated under the laws of the state of Texas, Sept. 25, 1916, with a fully subscribed capital of \$20,000. A. F. Clarkson, one of the largest ranch owners in West Texas, is president, and Dr. O. W. Jordan, vice-president.

Sonora is in Sutton county, the head of



feet, galvanized iron. This garage has in it one of the best steam vulcanizing plants in Texas and is operated by Dr. O. W. Jordan, who is well known throughout the state as "The king of vulcanizing mechanics." This garage maintains a day and night service, handles several brands of standard tires, operates an oxygen-acetylene welding plant and is provided with a lathe, electric light plant and all modern garage and light machine shop equipment.

The other picture is of R. Blaine Jordan in his office, which speaks for itself in equipment. Note the typewriter, adding machine, etc.

Mr. Jordan was born in Evansville, Wis., March 3, 1882, and attended schools and colleges in both Wisconsin and Texas. Served his apprenticeship in the machine shops of Houston, Tex., nearly 14 years ago and is considered a first-class machinist, having held some of the better positions in two of the largest machine shops in the "Lone Star" state.

Some six or seven years ago, Mr. Jordan became greatly interested in automobiles, and finally left the machine shops to become actively engaged in the garage and auto repair business. Three, nearly four, years ago, Mr. Jordan started a little repair shop in Sonora, and inch by inch has worked the business up until now he is the

the Devil's river, 97 miles from Del Rio, or the Mexican border. The nearest railroad point is San Angelo, 68 miles, although they have a railroad grade from San Angelo. The population of Sutton county is about 1,000. Sonora is the county seat and the only town in the county. Sutton county is wealthy. Beef cattle, sheep and goats are practically its chief source of revenue, and at one time Sutton county led the world in the production of beef cattle. Some of the largest ranches in the United States are in or border on Sutton county. "Automobiles!" exclaims Mr. Jordan. "Well, you would think so if you could witness a goat-roping contest. The writer hereby obligates himself to furnish a photograph of the next big assembly of automobiles in Sutton county to you, Mr. Editor."

Sonora is 2,600 feet above the sea level. It has a school building that would be the pride of any town in the south. It is 35 miles to flowing water which is on the Llano, and 65 miles to flowing water of the Devil's river, where no better fishing can be found, and at which place fishing parties from all parts of the United States may be found. When a newcomer, Mr. Jordan took delight in deer and turkey hunts, which game is abundant, but everybody else got to liking the sport, too, and

Mr. Jordan says he found it much more agreeable to listening to the hum of an automobile than the hum of some inexperienced hunter's 30-30, therefore you will find Mr. Jordan boosting for the business

truck agency—four counties for the Fulton, which they are handling in carload lots. They operate their own truck line between San Angelo and Sonora.

Mr. Jordan and his associates believe in



and actually working himself during the deer season.

The Jordan company sell cars as well as fix them. They have recently taken on a

organization and have joined the American Association of Garage Owners, the framed certificate of membership being shown in the office illustration.

### Solution of Used Car Problem Near at Hand.

According to R. E. Sproat, garage expert and Paige dealer at Grand Rapids, Mich., the solution of the used car problem is near at hand.

"From the standpoint of the dealer, the used car problem is one from which the least profit is derived and naturally on all trades it is absolutely necessary to know as accurately as possible the exact condition of the car before closing the deal," said Mr. Sproat. "Getting the information necessary to give an estimate of a car's value requires time and a knowledge of where and what parts usually give the most trouble.

"The used car problem reverses the situation between dealer and seller—the dealer in reality becoming the buyer. Yet in buying a used car the dealer must keep in mind that his motive is to sell the car again. So he must get a car at a price that will allow him to resell, getting his money back and allowing for any repairing or replacements that he may deem necessary.

"In view of the unprofitable return resulting from the handling of used cars, it is not surprising that an appraisal plan has been developed by the Automobile Business Association. And even this plan is not yet ideal. From a business standpoint, therefore, the dealer who wishes to have his used car department break even must get his used cars at a price low enough that

he can offer them for resale guaranteed to be in exactly the condition he claims and

then back the guarantee by refunding the purchase price if the car fails to do as claimed within a stipulated time.

"Dealers who sell used cars on a plan similar to the one outlined can do nothing more to prove that they are honest, sincere and working in the interest of their patrons. They deserve the confidence of every person wishing to buy or sell an automobile. There are many such dealers in Grand Rapids and buying used cars from them loses every element of chance or risk. In fact, there are daily many used cars listed that offer value far greater than that asked merely because the dealer does not sell used cars for profit, but merely to 'break even.'"

Some live dealers who sell both new and used cars keep a list of their used car buyers and work it as a prospect list for new car sales.

The seller of used cars should protect himself by employing a printed form similar to the one used at the Milwaukee show and featured on another page.

(Continued from page 26.)

the motoring public who require downtown accommodations. When there is anything new to be added he will be quick to act. He believes that "the early bird gets the worm" and he is there about as soon as is the worm. He has outside business interests and looks after them, but his chief attention is given to his big loop garage.

## Cigars a Side Line for Garages



Didn't we tell our garagemen friends to go in for merchandising? Proprietor Marksheffel of the Marksheffel Garage, Colorado Springs, Colo., believes in the soundness of that sort of advice and is one of the garagemen who sells everything he can at a profit. Eighty per cent of his patrons are smokers and why should he not sell them cigars? The cigar case shown above is in the accessory salesroom and nets the business more than \$200 a month. An outside view of the garage was printed in our November, 1916, issue, p. 37.

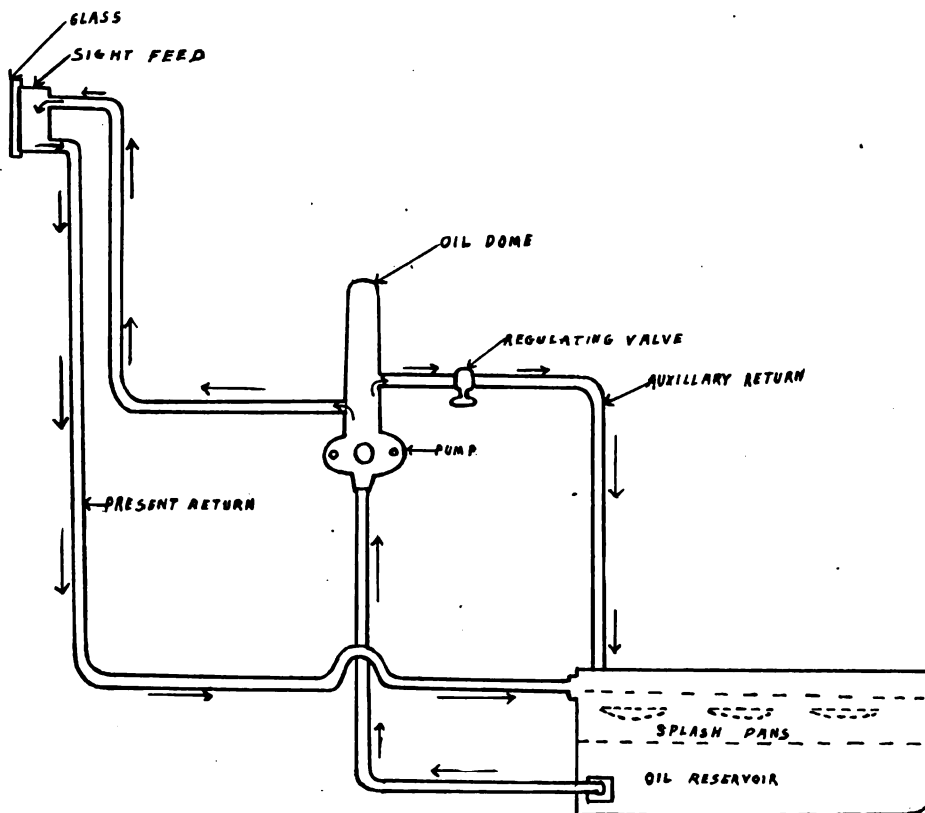
# Mechanical and Engineering Problems

THE mechanical and engineering problems of the craft are discussed monthly in this department in a helpful manner by E. B. Hinrichsen, for nine years a garage mechanic, service expert and manager, ten years chief engineer of the Wolf Motor Co., later with the Frederickson Engine Co. and now consulting engineer with the Western Electric Co. When shop information is desired, write Mr. Hinrichsen, care this office.

## Another Knock Query.

**Question.**—In the March issue of the AMERICAN GARAGE AND AUTO DEALER you answered my question in regard to the knock in the Oakland Six. You told me to look at the pump spring, which I did, and found it broken. I put in a new one and it took most of the knock out but there is still a little one but not like the one before. It is more a kind of "whung." Also when I speed up to 25 or 30 miles an hour the glass in the sight feed begins to leak around the edges, and twice when I have driven faster than this the glass has broken and thrown oil all over everything. Maybe you can help me again.

W. H. C., Michigan.



**Answer.**—The noise you now have is probably due to over-pressure and is sometimes called hydraulic pound. The fact that the glass in the sight feed breaks at high speed would also indicate too high a pressure.

The path that the oil takes is shown on the sketch. The pump lifts it from the oil reservoir and raises it to the upper entrance of the sight feed. From there it flows through the lower opening in the

sight feed to the upper part of the crank case and is distributed to the splash pans.

Some, if not all, of these return pipes—that is, the pipe from the sight feed to the oil pans—are of the same size as the pump or supply pipe. It is the fact that the return is too small to handle the oil from the pump that causes both pound and glass breakage. This has been overcome in many cases by installing an auxiliary return from the oil dome to the splash pans. This pipe should be equal in size to the regular return pipe and should have a regulating valve as shown on the sketch. This valve should be so set that while the pound and glass breakage is eliminated, there will be plenty of oil passing through the sight feed so that the driver may at all times be sure of his oil supply.

The auxiliary return pipe should enter the upper part of the crank case on the opposite side from the regular return pipe and should be arranged to distribute the oil to the splash pans in the same way.

This device is not difficult to install. It only requires the removing of the crank case and a little drilling, tapping and soldering. The amount of material is small and the cost negligible.

\* \* \*

## Generator for Charging Storage Batteries.

**Question.**—Some time ago I had your answer in regard to some questions about a generator which I wanted to use for

charging storage batteries. The information you gave me did not seem to be what I was wanting exactly, but it was not your fault, as I did not give you full information about the generator. Since receiving your answer, I have written to the manufacturers of this generator to find out what was the output. (I enclose their answer.)

I am using this generator for lighting my shop; also another building across the street from me. I am using 7 lights in the shop and the other party is using 8 lights. The lamps we use are 25 watt, 30 volt, 15 candlepower. I have no voltmeter and just use a rheostat. What I want to know is how many 75 or 80 amp. batteries I could charge at one time without affecting what lights are now in use. I would like to have complete information as to how to wire up this outfit for battery work, and please give me the address of some firm where I could buy a suitable ammeter for this work. How long ought it to take a 75 amp. hour battery to charge up to 1300 when it has been discharged down to 1150 providing it has not been in this condition over three weeks?

Please give me all the information along this line you can think of that would be of interest and assistance to me.

T. C., Texas.

**Answer.**—There are two ways that you could arrange this equipment to charge batteries. One is, by following out the former wiring diagram to a certain extent. In this case the first bank of lamps shown next to the double pole single-throw switch could be used for the building across the street and the second bank could be used for your shop. You could continue to use the same type of lamps you have at present, although if you loaded the dynamo very heavy with storage batteries, you would have to build up your voltage with the rheostat above what you are now carrying.

The other plan would be to multiply the battery leads with your lamp wires. That is, run another pair of wires for the batteries from the same terminals that your lamp wires are run from.

In either case, the number of 80 amp. hour batteries that you could charge at one time is theoretically four and this means loading the generator to the limit. This is figured with all lights burning. An ammeter should be used by all means in order that you may regulate the current in case you vary your lights or the number of batteries in the circuit. Your generator output is 40 volts at 12 amperes and as you are only using 30 volts, your amperes come up in proportion. This is an advantage for storage battery work. Your present light equipment is using about 12 amperes at 30 volts and as your machine will probably

*more  
money for  
garages*

How often are you called on to locate and correct trouble in Electrical Starting and Lighting Equipment? You are bound to have more and more of such calls, especially if you earn a reputation for knowing the electrical side of an automobile and handling it right.

There is money in Electrical Installations, Repairs, Adjustments, Renewals, etc. Some of the most wide-awake Garage Men have found it out. This year more money than ever before will be made that way, because there will be more electrical work than ever for the man who knows how.

Guesswork won't do. Every time you guess wrong you are likely to make yourself a peck of trouble and lose a customer in the bargain. What you need, and need right now before you find yourself losing opportunities to make money, is a

# Weston

## Model 280

## GARAGE TESTING INSTRUMENT

Do you want to be able to make quick, accurate tests to locate any defect in the electrical system? Or do you want to consume unlimited time taking apart every device and running a chance that you will discover the trouble sooner or later?

There are scores of places where trouble may occur. Unless you test electrically, you cannot eliminate any possible source of trouble without taking each device apart.

A poorly made, inaccurate electrical instrument merely adds to the uncertainty. What you need is reliable, positive knowledge. This Model 280 really is the equivalent of six separate Measuring Instruments of different ranges. It is extremely accurate, durable and serviceable. With it, you can do the work quickly and intelligently, putting yourself a long way ahead of any competitor who has not Weston Equipment.

This complete Electrical Testing Equipment is made by the world's foremost Electrical Instrument designers and makers. It meets every requirement for making electrical tests in the garage. With this WESTON MODEL 280 you can handle anything that comes your way in electrical work. And it doesn't cost a small fortune, either—mighty little for what it will let you make.

With the Instrument, we furnish full information showing you how to use it. And we have a staff of electrical experts whose advice is yours for the asking any time you think you need it.

### We Will Make You a Worth-While Offer

It includes not only the Instrument, but Special Service Features which will put you in a position to make the most of this rapidly growing and very profitable business. There is a limit to the number of garages to which the offer can be made, so don't put off looking into it. Write today for full particulars.

**WESTON ELECTRICAL INSTRUMENT CO.**

30 Weston Avenue, Newark, N. J.

23 Branch Offices in the Larger Cities





stand a 33½ per cent overload, you should have a good margin to go on.

You can obtain a suitable ammeter from any reliable electrical supply house. If you have any trouble getting what you want, let me know and I will try to find it for you.

The battery you mention should come up to full charge, if it is not damaged, in from eight to ten hours. It is hard to tell exactly but that is the maximum, including the overcharge, which it should have after standing in a discharged condition so long. It might be well to charge it and then discharge it through lamps to the same point and then recharge again before sending it out.

As soon as possible I will send you full general directions on the care and maintenance of batteries. I hope you will make it all right. Your lamps will prove a good guide by their dimming or brightening as to when you are overloaded.

\* \* \*

### Testing for Alignment.

An inquiry that came to AMERICAN GARAGE AND AUTO DEALER happened to be an-

The defects are then quickly remedied. This test, coupled with the inspection for the alignment of both front and rear tires, is performed on every wheel that leaves the Willys-Overland assembly rooms.

\* \* \*

### Noisy Valves.

**Question.**—We have in our repair shop a Dodge Bros. car, 1916 model, on which the valves are noisy. There are three of them that we can't stop from making a loud noise. Do you think the valves would stick after a year of wear? We set them up to 2/1000 of an inch and this did not help. We then set them up so that they would ride and that stopped the noise but the engine would not hit.

The car has run about 3,500 miles and the wear ought not to be so much that it would give trouble. Some of the valves stuck when it was new. The tappets revolve and some of them more than others and very fast. After the car gets warm it makes a louder noise than when first started and we can feel a kind of jerky feeling on the valve springs when the tappet comes down. The cylinders do not

valve stems to stick in the guides but this hardly seems probable.

\* \* \*

### Why Open the Cut-Out?

**Question.**—What is the idea of opening the cut-out when ascending a hill?

C. H. A.

**Answer.**—Back pressure is produced by the resistance formed in the exhaust-line and muffler to the free passage of the exhaust gases, which cuts down the power.

\* \* \*

### Soldering Cast Iron.

**Question.**—Is there a method by which cast iron can be soldered, and if so, how? Also, can cast iron be brazed without heating the entire piece to a white heat?—S. W. C.

**Answer.**—If you can copper cast iron in some way, which you probably can do by the use of blue vitriol, you will be able to tin it and then solder it exactly as you would any other metal.

Referring to the brazing of cast iron, will say that I know of no method of bonding cast iron with spelter unless the article is brought to a very high heat.

\* \* \*

### Repairing Ford Through-Spring Bolt.

Ford cars have a habit of shearing off the through bolt in the rear spring, and it is a good-sized job to take off the spring and replace the bolt.

If a hole is cut through under the rear seat, directly over the rear cross member of the frame, the bolt can easily be replaced. If the spring leaves have slipped out of place, the body can be jacked up and the leaves driven approximately into place with a hammer and blunt tool and finally located with a punch, working through the hole cut.

After the bolt is in the hole can be closed, either by a fitted cover or by a piece of tin soldered around the edges.

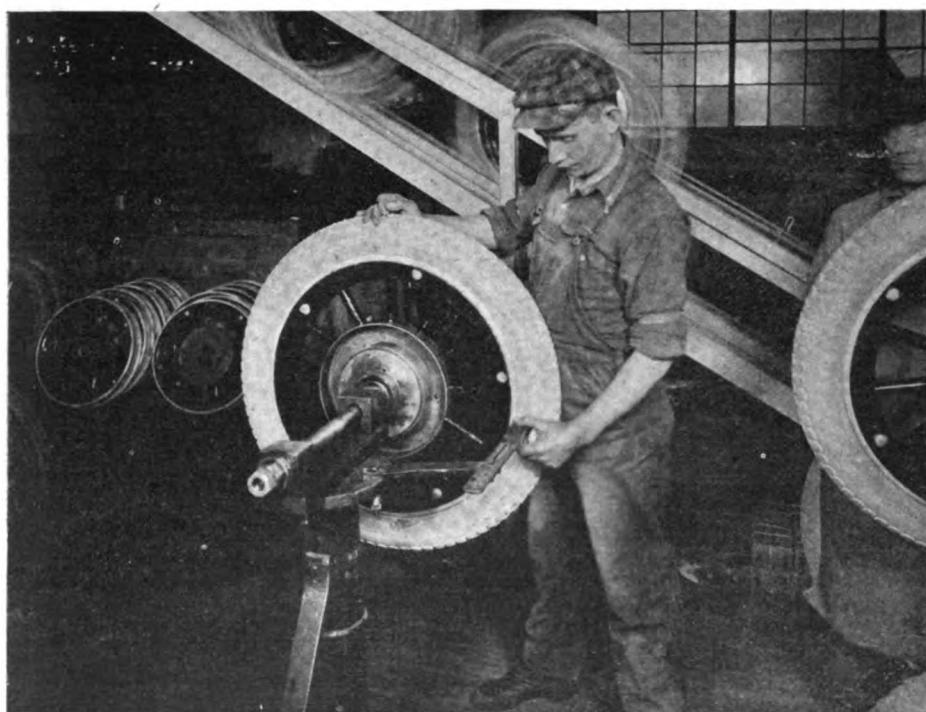
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### Differential Makes Disagreeable Noise.

**Question.**—Would like to ask a question about a 1913 Kissel. It has full Timken rear axle. Above a speed of 25 miles per hour the differential makes a very disagreeable noise. I have taken rear axle out and assembled the gearing, taking particular pains to see that pinion gear and master gear were meshed properly. Also that all Timken bearings were in proper adjustment. I have tried 660 W and several other heavier greases, but cannot stop the noise. What shall I do?

C. V. S., Calif.

**Answer.**—Either the ring gear is warped, or else the shaft on which the pinion is fastened is not running true. Either one of the other things is the matter, if you have the proper adjustment between the ring gear and the pinion, always with the understanding that the differential gears are in good shape.



swered in the same mail by the following illustration from the Overland company:

This shows the Overland method. Each tire, after the wheel has been assembled, is thoroughly inspected and tested for alignment. It must be lined up evenly with the rim, before it can be placed on a chassis.

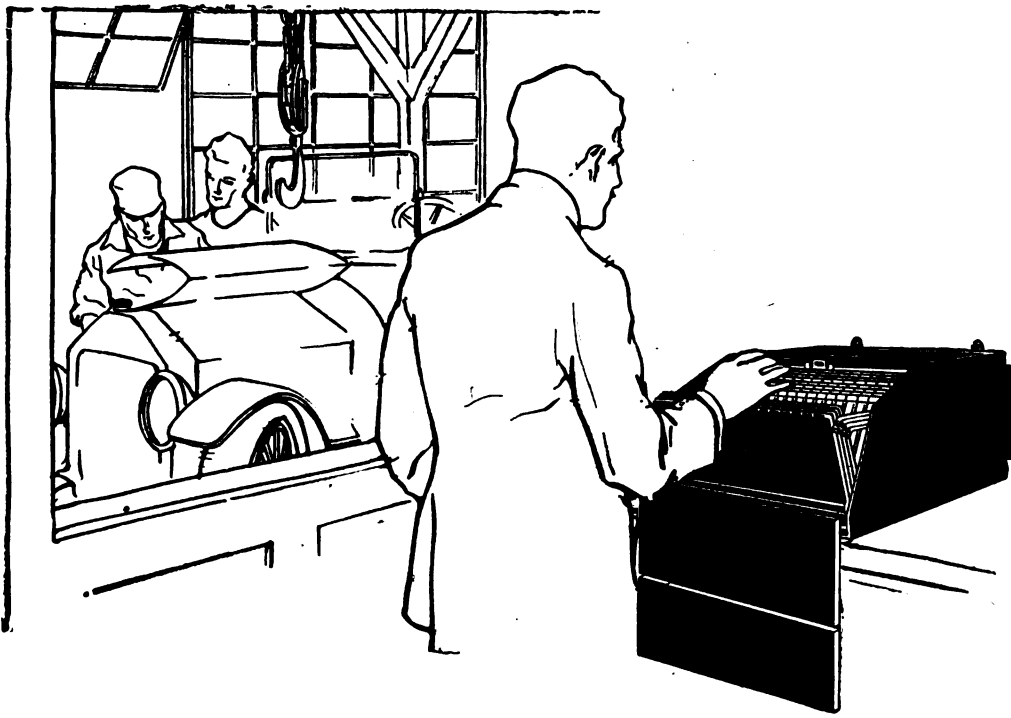
The inspector mounts the wheel on a pivot, then swings a roller into place against the run of the wheel. Alongside of this roller, pressing against the high point of the tire he firmly holds a marker, while he revolves the wheel. Naturally he marks the spots which are in alignment, and misses the portions of the tire which require further adjusting.

miss fire. We put coal oil on the valve stems but this did not help. Do you think new lifts would help?

— & Son, Iowa.

**Answer.**—From your description, I am of the opinion that a bad lot of metal was used in the valve tappets. This will happen sometimes in spite of tests and inspections. If this is the case, you will find that the cams have cut into them where they hit. The best remedy is to replace them if you find them in this condition. It would be well to examine the cams at the same time.

Before doing this, however, I would be sure that there was nothing to cause the



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No ledger—no more forgotten charges. Keeps every customer's account balanced to the minute and ready for immediate settlement. Gives an accurate statement any time one is wanted.

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*Do not waste time, effort and patience doing the work a machine can do for you. Write to us for literature on the Credit File.*

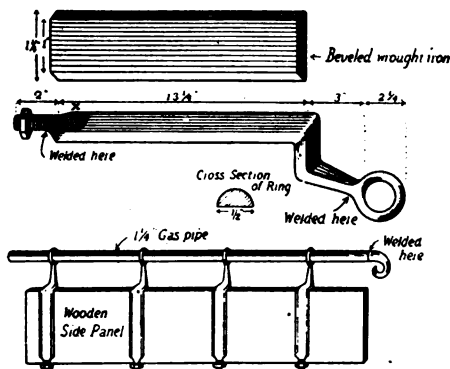
**Address Department 33**

**The National Cash Register Co., Dayton, Ohio**

# Welding, Cutting and Brazing

## Ford Auto Carts.

We are doing the following work at a St. Louis plant, writes Walter G. Weise. The work consists of brackets and gas pipes for hand rails for Ford Auto Carts. After being welded they are polished and highly brass plated. We have done twenty-four hundred of them, two welds on each bracket, making 4,800 welds. Here-with is a sketch of brackets, which will undoubtedly make things more clear.



Iron for brackets is  $1\frac{1}{4} \times \frac{3}{8}$  to 1" beveled. Ring is  $\frac{1}{2}$ " half round and bolt end of  $\frac{1}{2}$ ". Brackets are forged out by blacksmith to correct size and form, then ring is welded on one end and bolt on other end. Both of which would be impossible to weld on forge.

"I can weld fifty complete in one day, where the blacksmith would be lucky if he made fifteen for the day," says Mr. Weise.

\* \* \*

## Care in Cylinder Heating.

J. W. Gannon lays stress on heating cylinders, base down. L. B. Mackenzie says they should be heated evenly and advises that the heating be where the weld can be made without removing the cylinders from the fire. Mr. Gannon differs from Mr. Mackenzie only in the manner of the position of cylinders, he stating that he wants the heat to go inside as well as outside.

There is much to be said on both sides of this question, but the chief thing, of course, is even heating. Probably, Mr. Gannon can better obtain this even heating by the manner he describes. Other shops do not attempt to heat auto cylinders on the inside and there is one shop which manages to get away with at least twenty cylinders a day without heating the bore of the cylinder except from the outside.

Heating Buick cylinders properly is a terrific job, due to the varying thickness of metal. Welding an ordinary water jacket break means that the cylinders are pretty sure to crack open around the spark plug openings, due to the fact that at this point the metal is very heavy and the metal of the water jacket very light, a condition to be dreaded unless proper

provision is made in preheating. Welders who study the construction of this cylinder overcome the difficulty, according to F. C. Sanborn, by first making the weld around the spark plug and then welding last the section of equal thickness; or in many instances, the jacket was chiseled in order to allow for the "pull." The welding of cylinders calls for knowledge of their construction and then care in preheating.

\* \* \*

## Welding Ford Engines.

When Ford engines are welded the main bearings, which are poured and not removable, are preheated, and this often results in damage by melting. The welding should be done cold.

When the weld is on the water-jacket, the construction demands that it be preheated, and this can be done without injuring the bearings provided proper methods are employed. Fill the cylinder (the bore) with asbestos and also the crank case, lay the block on your brick table in such a way that the crack in the water-jacket is level. Then place wet asbestos around the bearings, completely covering them.

Use about 6 or 7 pounds of charcoal and after you have built a temporary furnace around the entire block, light the fire. Change the asbestos from time to time as it dries out. It is necessary only to have a direct heat or fire on the side your break is on, as the heat radiation will take care of the expansion of the opposite side. After taking care of the expansion, weld fast and, after finishing, pack the weld and the complete cylinder. Be careful to keep the asbestos damp through the entire operation.

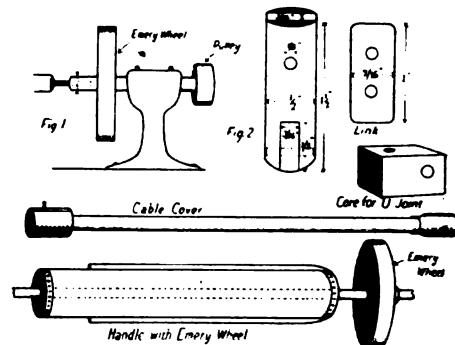
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## Flexible Grinding Shaft.

A good emery stand and a flexible grinding shaft are just as important in a welding shop as a good welding torch, says a writer in the Welding Engineer. We found it impossible to secure a good reliable flexible shaft until necessity forced the issue and we built one according to our own ideas which we have found not only reliable for all classes of work but absolutely dependable and far better than anything we were able to buy ready-made. For the benefit of others we give directions by which any good mechanic can build his own shaft and at a less cost than he can buy one ready built. Material necessary: One 6 foot cover such as used on mule or horse clippers. This is a spiral wire tube, cloth covered, with  $\frac{3}{8}$ -inch bore, and costs about \$4.00. Each end has a cast iron terminal. Six feet  $\frac{1}{2}$ -inch shafting, 5 feet flat steel  $\frac{3}{8} \times 7/16$ -in. 12-inch piece of 1-inch galvanized water or gas pipe, 16-inch  $\frac{3}{8}$ -inch shafting. 2 sets of motorcycle cones and cups, 2 sets of ball racers

with balls, 2 feet  $\frac{1}{8}$ -inch steel wire—or wire nails will do—2 yokes such as are used on automobile brake rods. 1 piece  $\frac{1}{2}$ -inch square steel  $\frac{3}{4}$ -inch long.

Make a universal joint out of the two yokes and small square piece of steel, by drilling  $\frac{1}{8}$ -inch holes in the small square near the center and at right angles to each other. Drill  $\frac{1}{8}$ -inch holes in prongs of yokes and attach to square core with  $\frac{1}{8}$ -inch wire or nails. Then drill a  $\frac{3}{8}$ -inch



hole in your emery shaft 2 inches deep and be sure it is straight. This is to furnish power for your flexible shaft. Fit one end of the U-joint in this hole and attach as shown in Fig. 1 so it can be taken out when not in use.

Cut the  $\frac{1}{2}$ -inch shafting into  $1\frac{1}{2}$ -inch lengths and the flat steel into 1-inch lengths. Cut a  $3/16$ -inch slot in each end of the round pieces a full  $\frac{1}{2}$ -inch deep and at right angles to each other as shown in Fig. 2, with  $\frac{1}{8}$  hold  $\frac{1}{4}$  from outside end. Countersink each hole slightly. Drill  $\frac{1}{8}$ -inch hole  $\frac{1}{4}$ -inch from each end in the flat pieces and slightly round the corners. Connect these pieces using the  $\frac{1}{8}$ -in. wire until you have the desired length and you will then have a continuous universal joint and this is the flexible shaft. Connect this to one end of the universal joint made out of the brake yokes.

Drill a shallow hole in each end of the gas pipe so as to fit the ball cups. Thread each end of the 16-inch shaft so as to fit the cones and nuts. Connect the shaft and pipe just like a bicycle hub. This is your handle.

Drill out the long iron on end of your cover so as to fit over the end of handle and fasten with the set-screw always in same. Connect your handle with flexible shaft, fill the cover with cup grease, push your shaft through it, attach to your emery stand and you are ready for business. The best connection for the driving end of the shaft is to take a  $1\frac{1}{2}$ -inch piece of  $\frac{3}{8}$ -inch gas pipe, flatten one end so as to go in one of the slots, and attach the other end to the main U-joint, using the ordinary threaded coupling. In using this shaft the main driving U-joint should always be

# • EVENTUALLY • ALL • LEADING • DEALERS • WILL OPERATE • BATTERY • SERVICE • STATIONS

Are you as a dealer aware of the great development that is now taking place in the battery business? Batteries are rapidly becoming an absolute necessity on every car. The battery business is growing by leaps and bounds.

Detroit Battery dealers are everywhere making big profits.

First because of the battery itself.

The Detroit Battery is a decided improvement on other types.

Our careful inspection of every part—every bit of material and of each operation insures absolute purity and high quality throughout.

## *The Greatest Single Improvement*

effected in the Detroit Battery is in the plates. We have succeeded in producing the ideal plate for which all battery makers have been striving — a plate that is hard and at the same time porous. This combination has given Detroit batteries a greater capacity in proportion to weight and size than any other battery ever produced and approximately six months longer life than other batteries.

The Detroit Battery not only gets customers for the dealer, but holds them year after year. It is the foundation of a thoroughly successful business.

And from the service depot standpoint, the de-



sign and construction of the Detroit Battery is especially important.

## *The Unicell Feature*

permits removing and repairing individual cells, without tearing down the whole battery or injuring other parts. This means less repair time and greater profits.

The Detroit Battery Co. offers an unusually

helpful co-operation to its service depots.

## *Advertising*

in the motor publications is making the battery well known among car owners everywhere.

Local campaigns, fence signs, direct mailing cards, folders and so forth are provided.

And we furnish to our own service men a course

of instructions in conducting a battery business. It begins with a practical course on the care and repair of batteries, covers such details as how to secure business, how to advertise, how to talk to customers, service policy and even such details as a bookkeeping and accounting system.

## *Send For Our Portfolio*

We describe our whole proposition in a portfolio which contains samples of the advertising, samples of the course of instructions, a specially dictated proposition explaining the equipment necessary, the cost, and the probable profits.

We want every live dealer to look over this portfolio. It will be interesting, and may lead to a large profitable business.

Write for it now while you think of it.

Fill out the coupon—a lead pencil will do if a pen is not handy. You will learn the possibilities in the battery business and how you can easily get into it.

## *Send This Coupon*

**Detroit Battery Co.**  
108 East High Street  
Detroit, Mich.

**Send me the Portfolio.**

Name \_\_\_\_\_

Address \_\_\_\_\_

**DETROIT BATTERY COMPANY**  
DETROIT, MICHIGAN



kept practically straight—the balance of the shaft can be used at any angle desired.

\* \* \*

### Building a Welding Business.

A repair man in Southern Indiana depicts a scene in a modern welding shop which illustrates the build-up idea in business. The conversation is between an ex-welder (ex for obvious reasons) and a progressive, up-to-date welder who is making good:

Jim (the former welder): "You should have charged him about \$5.00 for that repair, Frank, instead of letting him get away for \$3.00 and wasting all that time explaining the details of the process and why it costs so much for preheating, gases and labor."

Frank (proprietor of the shop and enthused with the service and build-up idea, as well as a booster for the welding industry): "You are wrong. This was the first job he ever had welded. The time I took in making the explanation is going to help the game, for now he has a faint idea of the possibilities of the torch. The next time he breaks an article made of metal his mind will revert to what I have said and the chances are that I or some other oxy-acetylenist will get the job."

"I am here to stay. The welding business has had a good many hard knocks due to poor workmanship. If I do a poor job the customer invariably blames the process, for he is unfamiliar with oxy-acetylene welding and does not recognize poor workmanship as would be the case if he had a poor job of printing, carpentry or any other trade with which he is familiar."

"I should have overcharged him, should I? That is just what is hurting the best interests of the business. Some of these get-rich-quick, old-fashioned solderers and welders should be run out of town. They are looking for a big profit today and not thinking of the future or building a permanent business. Unless a competitor can cut your price he will not get your work."

"The man I just charged \$3.00 for a job will come back and send a friend here when he has the opportunity instead of knocking me as a robber. I made a very satisfactory profit and saved him considerable time and money. And, finally, as I said before, I am here to stay and I believe that if I give my customers a square deal now I can conscientiously sell the good will of this shop and not worry about tomorrow."

"Reflect a little, Jim, and you will be convinced that I am right."

\* \* \*

### Not Particularly Dangerous.

The statement that oxy-acetylene tanks are extremely dangerous equipment for a shop appeared in a weekly engineering journal and needs correction. They are no more dangerous than steam boilers. Accidents occur in both cases through careless handling, the liability in one case being no greater than in the other.

### Auto Welders, Attention!

When you finish an interesting piece of work, can you set down on paper the manner in which you went about the job, how you prepared the work and how the job was done? Have you learned some little stunt every welder ought to know? Contributions to this department are paid for. Write it down any old way. We will polish it up. Make a rough pencil sketch and our draughtsman will fix it up fine. Line drawings are more practical than photographs. Do it today—the men on the firing line are waiting.

### Welding Defective Brass Unions.

**Question.**—I recently attempted to weld defective brass unions, which will not stand the proper pressure after being cast. Could not do this without greatly discoloring the union itself as well as the added metal, which makes the work undesirable. How can I do away with this discoloration, as grinding on these is not acceptable?—L. H., Mass.

**Answer.**—Brasses and bronzes are quite difficult materials to weld, and because of their composition it is practically impossible to maintain or produce the same color in the weld as in the original material, according to a writer in the Acetylene Journal. Both of these materials are alloys containing elements, zinc and tin, which burn out very easily, when at high temperatures. Because of this, there is a certain loss of these two elements, and consequently the resulting material in the weld is not of the same composition and color as the material added.

If one alloy is to be welded to any great extent, it is sometimes possible to cast welding rods containing large proportions of these easily volatilized elements so that the weld will be practically the same as the rest of the casting. We therefore suggest that, in case the company for whom you are repairing the castings have considerable of this work to do, you endeavor to have them cast special rods for you containing a high percentage of zinc—about 15 per cent more than the regular alloy.

\* \* \*

### Old Stove for Preheating.

W. E. Rodgers relates an interesting experience. He writes:

"I have had a welding and cutting outfit for about two years and I am getting along fine. I did a job the other day that might help some other welder. I have made a rough drawing of it. The pieces were lost, so it was up to me to fill it in, which I did with a piece of an old lumber wagon boxing and it looked fine and stood the test. It belongs to a pump of a tug."

"The way I preheated: I have an old box stove without bolts in it, so I lifted the top off, packed in some hard wood and then put the pump head on top and got a big fire on. When good and hot I welded one part, turned it over, welded the other

side through the door of the stove and then built another fire and let it all cool down together. I use the old stove a lot for preheating. I hope this will help some brother welder."

\* \* \*

### Color and the Torch Flame.

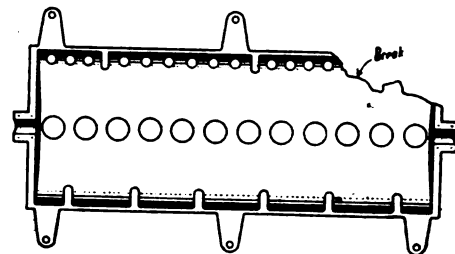
**Question.**—Why does my torch show a transparent blue flame at times and at other times it is yellow?—A. J., Ky.

**Answer.**—Where the flame is yellow it indicates impure gas. A transparent blue flame indicates pure gas. You are probably using a generator, as tanked gas is purified and tested every day. See that the filler or purifying material in your generator is not exhausted. You can test the purity of your gas by holding a piece of white blotting paper on the outlet with a few drops of 10 per cent silver nitrate. Let the gas blow on the paper for a few seconds. If the paper turns black it shows that your gas is impure. New purifying material should then be added.

\* \* \*

### Aluminum Crank Case.

John H. Margel sends a sketch of an aluminum crank case. He first preheated and made a plaster of paris form, build-



ing up to hold the broken parts, after which he welded. The case is in service and as good as new.

\* \* \*

### Gasoline Shortage Foreseen.

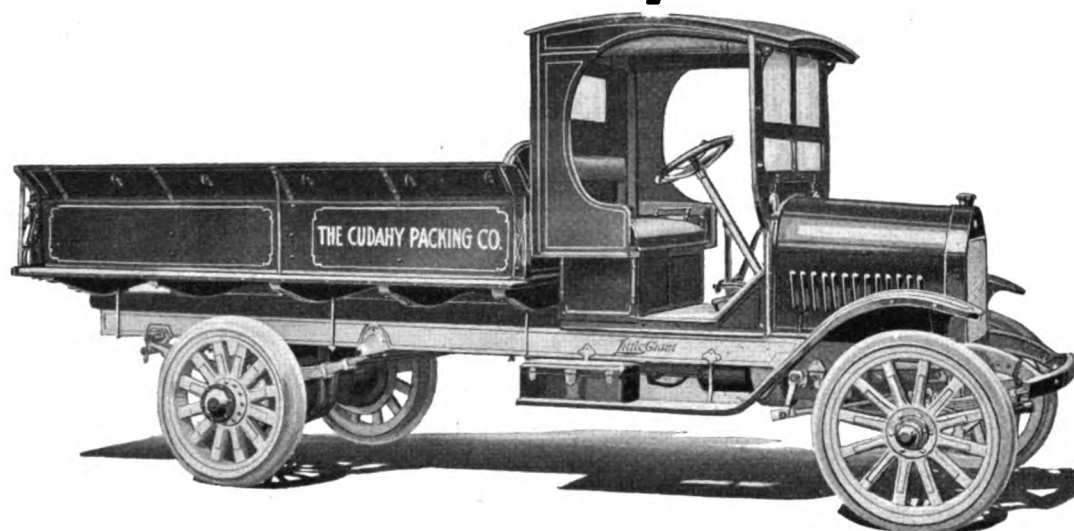
The problem of keeping up with the demand for gasoline was the main subject of discussion at the Kansas City meeting of the American Chemical Society.

Figures were produced showing that in the last seven years the production of petroleum had increased thirty per cent, while the consumption of gasoline had increased 400 per cent, and the number of automobiles 800 per cent.

The conclusion was unanimous that some other fuel must be used, as there seemed no possibility of satisfying the demand with present methods. This was in spite of the agreed statement that a billion gallons of gasoline would be produced next year by the cracking process. That amount will not satisfy the demand. The problem was left unsolved except that a method could be invented to get more gasoline from petroleum than the cracking process.

The Hazleton, Pa., garagemen and dealers have organized a trade association with Adam Eidam as president. They have issued a protest against illegal arrests of their chauffeurs and customers.

# *A Square, Genuinely Attractive Dealer's Proposition*



## **Sincerity**

Our proposition to dealers is undeniably attractive and highly profitable for the dealer.

But frankly, we don't believe it will interest everyone.

We don't say it is "the best dealer proposition in the world," or even "in America."

Because dealer requirements vary widely.

We do honestly think, however, that these facts will interest the dealer seeking a profit making truck line built on truth, not talk.

The Little Giant Line is complete, from the Convert-a-Car (Ford truck-unit) to the 5 ton mover of goods.

Little Giant 9-year-olds are still running. 11,000 have made good in over 175 lines of business.

Deliveries are guaranteed for promised dates.

Intensive local advertising.

A truck that "proves" in demonstration, because 23 years' engineering and mechanical experience is in it.

Doubly guaranteed: by the makers of the standard units which comprise it, and the \$14,000,000 Chicago Pneumatic Tool Co.

A line that means a large net income for the dealer.



In open territory, we want to get in touch with MEN who appreciate a "clean" proposition. To such men we can show the way to a rosy business future, builded on sincerity.

For particulars, wire or write

# **Chicago Pneumatic Tool Co.**

**Little Giant Building    1615 Michigan Ave., Chicago  
Truck Dept. 3**

# How to Make the Shop Pay

## Bringing Order Out of Chaos—The Records to Keep — How Profits Are Determined

By E. B. HINRICHSEN  
Mechanical Director A. A. G. O.

THERE were six men employed in the shop. The only names Mr. Brown had for them were those he had heard them addressed by.

First, there was Bill, mentioned before as being more or less the head of affairs. Then came Fred who seemed to be the next best man. Charlie appeared to be a cross between a mechanic and a helper. John and Tom were helpers. Sam was general roustabout and slightly performed the duties of a janitor. "Lige" was the negro boy whom we met last month and constituted the night force.

During the next few weeks Mr. Brown watched the employees one at a time and kept a careful record of each one covering a period of several days.

The card records are taken at random from the lot. Some day's records are better and some worse, but they are a fair average.

The rates of pay were afterward furnished Mr. Brown when he figured the profit and loss.

### Daily Shop Employee Record.

Date: June 11, 1916.  
Name: Bill.  
Rating: First-class mechanic (foreman).  
Pay: \$4.00 per day of 10 hours or less.  
A. M.—

See Note.

Reported: 7:25.  
Started: 7:50—Job: John Smith..... 1  
Quit: 8:30.  
Reason: Called away to set carburetor on car that Charlie was working on.  
Started: 8:30—Job: Carburetor (Charlie).  
Quit: 9:05.  
Reason: Finished.  
Started: 9:05—Job: John Smith.  
Quit: 9:50.  
Reason: Went to help Fred lift engine from car.  
Started: 9:50—Job: Lifting engine (Fred).  
Quit: 10:30.  
Reason: Finished.  
Started: 10:30—Job: John Smith.  
Quit: 11:30.  
Reason: Called to clear case of trouble on car and lunch... 2

P. M.—

Reported: 1:10.  
Started: 1:15—Job: John Smith.  
Quit: 2:10.  
Reason: Called away by salesman to explain technical point to prospective buyer..... 3

Started: 2:10—Job: (Salesman).  
Quit: 3:00.  
Reason: Finished.  
Started: 3:00—Job: John Smith.  
Quit: 3:30.  
Reason: Went out to help on case of trouble Charlie had gone out on.  
Started: 3:30—Job: Trouble (Charlie).  
Quit: 5:30.  
Reason: Finished. Quit for day..... 4

### WORK SUMMARY.

Job:	Material:	Hrs.	Min.
John Smith.....		3	40
Several handfuls of waste and some sheet brass.			
Helping Charlie.....		0	35
Material: None.			
Helping Fred.....		0	40
Material: None.			
Trouble .....		0	30
Material: None.			
Salesman .....		0	50
Material: None.			
Trouble (Charlie)....		2	0
Material: Mileage, amount unknown.			
Total Time:		8	15

### COPY OF DAILY WORK REPORT.

(Obtained from bookkeeper.)

Job:	Material:	Cash:	Job:	Total Time:	Material:	Cash:	Remarks:
John Smith. Car:							
Buick.				7	0		
Total Time:							
Material: None.							
Cash: None.							
Job: Tourist.				2	0		
Total Time:							
Material: Mileage, \$2.00.							
Cash: \$3.50.							
Remarks: None.							

### NOTES.

- 1—Could not find clean overalls and went out to buy some. Balance of time putting them on and getting ready to work.
- 2—Located trouble as fouled plug. Balance of time talking with owner and filling car with oil and gas. Talks well and seemed to be well liked. Did not return to job again in a. m.
- 3—Made his point well. Seemed to please. Knew when to leave.
- 4—Apparently cleared trouble in good time. Car owner well pleased.

### BALANCE SHEET.

Pay .....	\$4.00
Overhead (approximate).....	1.50
Material (estimated).....	.30
Mileage .....	1.50

John Smith, 7 hours at \$0.80....	\$5.60
Tourist (flat charge).....	1.50
Mileage .....	2.00
	\$8.10
Profit .....	\$0.80

### Remarks:

Figures show profit of eighty cents which was made by charging John Smith for 3 hours and 20 minutes which he did not get. Mileage was too low and charge to tourist for time too low. Charlie's time with tourist lost and double mileage used. See report on Charlie for same day.

When will John Smith get his car and what will his bill be?

Will 80 cents pay interest on investment and depreciation?

In our next issue we will publish more of these records including Charlie's record for the same day.

### Olympian Dealer Contracts.

R. A. Palmer, president of the Olympian Motors Company, of Pontiac, Mich., announces the closing of two important dealer contracts for Olympian cars, thus furnishing more evidence of the growth of the dealer organization. One of the contracts was closed with the Stellar Motor Company, of Pittsburgh, through J. D. Cook, president of the company, who ordered his initial shipment of Olympians sent to Pittsburgh by express due to the freight car shortage. The second contract was signed with D. T. Packer, of Saginaw, Mich., who already has driven six of the cars over the road from Pontiac.

### Elgin Building Inadequate.

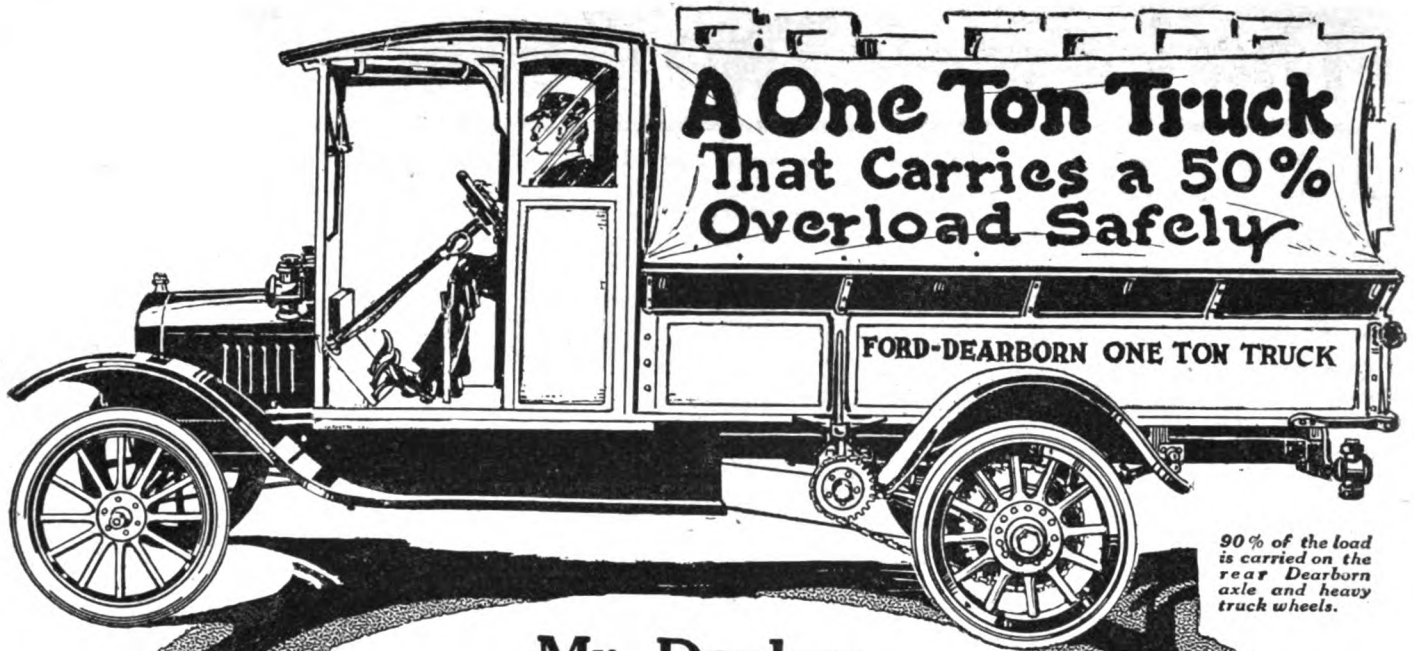
The new Elgin building in Chicago's Motor Row already is inadequate. The purchasing and accounting departments of the Elgin Motor Car Corporation have been moved to temporary quarters to make room for the expanding sales department. Of this year's output, more than ninety per cent has been contracted for, with cash deposits in advance on each car.

### The B. F. Goodrich Rubber Co.

The B. F. Goodrich Company announces an official change in name to The B. F. Goodrich Rubber Company. The old name is thoroughly known in the trade, but it has been found the new and more descriptive name will require less explanation to new-comers.

### Furner Garage Addition.

The Furner Garage, 3909 W. Harrison street, is one of Chicago's comparatively new garages, but it has outgrown its premises and will have a new 40-car capacity addition built this spring, giving the garage a 120-car capacity. Edward Furner, the proprietor, is one of the best posted garage-men in the city and believes in standard, lucrative prices.



**Mr. Dealer:**  
**You Can Make Big Money NOW!**

**R**IGHT NOW in your own locality are scores of prospective purchasers of Ford-Dearborns who cannot afford \$1500 for a truck, (the average price of a one-ton truck) but who would gladly buy a Ford-Dearborn at \$350 plus a Ford chassis. You can get this business.

The Ford-Dearborn makes a *real* one-ton truck that will do all the work that any one-ton truck will do at one-third the cost. And the Dearborn Truck Company is a *real* manufacturing company with a big, well-equipped factory and it is *not* a stock selling organization.

**\$350 and a Ford, New or Old, Make a**

**FORD-  
 DEARBORN  
 One Ton Truck**

The Ford-Dearborn is so designed that 90% of the load is carried on rear Dearborn axle with its heavy truck wheels, Baldwin roller chains, Baldwin cut steel sprockets, Jack shaft hangers and back rod hangers hot riveted to frame, not *merely* bolted.

Pruden artillery type wheels, guaranteed hickory spokes and felloes. Bock heavy roller truck bearings are used throughout.

The Dearborn unit is made complete in our own factory and is guaranteed in every detail. We carry on hand all parts which can be supplied quickly.

Wire or write for dealers' Big Money-making proposition.

**DEARBORN TRUCK CO.**  
 1228 S. Campbell Ave., CHICAGO



# The Law *and* The Garage Trade

*THIS department is edited by CHARLES C. BOMBAUGH, LL. B., general attorney of the American Association of Garage Owners, and a prominent practitioner in the federal and state courts; also lecturer and writer on commercial law. When information on any legal problem connected with the operation of your business is wanted, write this department.*

## Has No Lien.

**Question.**—I repaired a car and rendered a bill for \$10.50. The car was taken out of my garage by the owner on the promise that he would pay within a week. He has not paid, neither has he brought his car back to my garage. Have I a lien on the car? J. L. S., Montana.

**Answer.**—Section 5805 of the Montana Code provides that every person who while lawfully in possession of an article of personal property, renders any service to the owner thereof by labor or skill employed for the making, repairing, protection, improvement, safe keeping or carriage thereof, has a special lien thereon dependent on possession for the compensation, if any, which is due to him from the owner for such service. Under this law our Montana friend had a lien until he let the car go out of his possession. He lost his lien when he let the car go out. Montana needs an efficient garage lien law.

\* \* \*

## Hold the Car.

**Question.**—One of our customers is in a bad way financially and owes us \$100. We have his car in our garage. Can we hold it? C. W. C., Pa.

**Answer.**—Under the Pennsylvania law the garageman has a common law lien for repairs and can hold the car on which this work has been done, and under a special act passed a few years ago he cannot only hold a car for repairs, but for storage and other services, and if the owner should secure possession through misrepresentations or other subterfuge he subjects himself to a fine up to \$100 or imprisonment up to three months in the county jail, or both, in the discretion of the court.

\* \* \*

## Garageman Not Liable.

**Question.**—What is the liability of a garageman who rents out an automobile and allows the man to whom it is rented to do his own driving? J., Tenn.

**Answer.**—There is no liability to the garageman. The liability for accidents sustained by any person who is injured or any property that is damaged by the car attaches wholly to the driver.

\* \* \*

## False Representations by Car Seller Must Be Proved.

The New York Appellate Division holds, in *McAvoy vs. Maxwell*, 158 N. Y. Supp. 844, that the plaintiff in an action for damages for false and fraudulent representa-

tions in the sale of a second-hand automobile, was bound to establish false representations as to matters of fact known to be false, and his reliance thereon to his damage. A statement of the seller of an automobile that if the buyer was not satisfied he would refund the money was in the nature of a promise, and not a representation of fact, which could be a ground for recovery for fraudulent representations.

\* \* \*

## Wisconsin Lien Law and Bankruptcy.

**Question.**—Can a car be held by garage owner for repairs and supplies after owner of car goes into bankruptcy?

**Answer.**—The courts of Wisconsin have held that the garage keeper has a lien provided he complies with the statutory provisions regarding posting of card stating charges for storing the automobile, etc. This being true the bankruptcy proceedings would not wipe out the lien created in good faith and without notice of insolvency of car owner. The bankruptcy court would probably order the car sold by the trustee and the lien to attach to the proceeds of sale.

\* \* \*

## An Important Illinois Garage Decision.

The Appellate Court of Illinois has very recently determined important questions concerning garage owners (*Glende vs. Spraner*—198 Ill. App. 584). An abstract of the decision follows:

**When Garage Keeper Storing Vehicle Liable as Gratuitous Bailee.**—The keeper of a garage who stores a vehicle over night to accommodate its owner and without agreement as to compensation is a mere gratuitous bailee and is liable for gross negligence only, or a want of slight care or diligence.

**When Garage Keeper Exercising Ordinary Care Not Liable for Loss of Stored Vehicle.**—A garage keeper who, for compensation, stores a vehicle for the owner is not liable for its loss by theft, if he exercised ordinary care to prevent it.

**When Burden of Proof on Bailee and When on Bailor in Action for Loss of Bailment.**—In an action by a bailor against a bailee to recover damages for the loss of the bailment, where plaintiff shows the delivery of the bailment to defendant and the failure of defendant to make redelivery, the burden is on defendant to show the exercise of the degree of care required by the nature of the bailment; but where it appears that the bailment was lost, stolen or destroyed by fire, the burden of proving negligence is on the plaintiff.

**When Garage Keeper Not Liable for Theft of Motorcycle.**—In an action against a garage keeper to recover for the loss of plaintiff's motorcycle, where the evidence shows that plaintiff had left the machine in defendant's garage over night, that he had advertised it for sale and had so informed defendant, also informing the latter that the

machine could not be operated until repairs were made, and had left his name and address with defendant and had requested the latter to permit any one to inspect the machine whom he might send around, defendant is not liable for the theft of the machine by one who presented a written permit from plaintiff to inspect and, under the pretext of inspecting it, stole it, riding it away.

\* \* \*

## Good Thing.

Under the law of Wisconsin, a garage keeper has a lien superior to the rights of the holder of a chattel mortgage.—Sec. 159, Northwestern Reporter, 138.

## Bankruptcy and the Indiana Lien Law.

**Question.**—I have a car in my possession on which I have made repairs and for which I have furnished supplies. The owner of the car is in bankruptcy, and what I want to know is whether or not the receiver can take this car away without paying my bill? In other words, does the Indiana lien law protect me?

J. A. T., Ind.

**Answer.**—If you complied with the terms of the Indiana lien law (chapter 156, Laws of 1915) and acquired a lien on the car prior to the filing of the bankruptcy proceedings, your bill should be paid in full by the receiver. Otherwise your claim will be treated the same as other claims against the bankrupt estate.

The Indiana law requires that the garageman file his lien against a motor vehicle in the office of the recorder of the county where the work was done within 60 days after the last item of work was done or material furnished, the notice showing amount claimed and a description of the vehicle. The law also provides that all such liens must be foreclosed within one year by an action in the circuit court of the county where the vehicle is located.

\* \* \*

## Collect Before Car Goes Out.

**Question.**—Do I understand that if a car on which I make repairs goes out of my garage I lose my lien, when the owner is a regular or occasional customer and his car comes back into the garage regularly or occasionally? What I mean is, Cannot I hold the car on the lien any time after I acquire the lien if it should come into my possession again and they always do in the case of a regular or occasional customer?

W. H. L., Mich.

**Answer.**—When the car is taken out of your garage you lose your lien, even though the car is brought back five minutes afterwards. This is one of the serious defects of the Michigan law and makes a cash business the only safe business for an auto repairer to do in Michi-

# for FORD transmissions

CORK INSERT CORK INSERT CORK

Pat. Jan. 15-'07, May 23-'16. Copyrighted Trademark, Advance Automobile Accessories Corp.

## They Make the Ford Brake *Brake!*

When you step on the brake you *know* there is going to be action—you *know* your Ford is going to *stop* and stop with a positive smoothness and easiness. *Gone* will be the *jerking* and *rattling* and *lurching* and *chattering* when you stop—all due to

**\$3**  
Per Set  
of 3



**\$3**  
Per Set  
of 3

Cork Inserts *stop the vibration, stop the rattle and stop the car.* The trouble isn't with the Ford—nor with its brake—nor with its simple and positive transmission system. The whole trouble is in the transmission linings. Ordinary transmission linings become hard and glassy—smooth from the constant pressure, friction, and soaking in oil. When the brake is applied they grip and then slip—it's that grip and slip—again and again—that causes

the vibration, that ruins your car and makes it rattle.

ADVANCE CORK INSERTS can't get hard and glassy as does the ordinary transmission lining. They can't grip suddenly nor slip quickly. The cork won't allow them to. For cork can't char nor burn. Cork won't get oil logged and hard. The cork puts *permanent* and *positive grip* in transmission linings and the corks don't wear out.

## Don't Have Your Ford Transmission Relined Three or Four Times This Year

Put on a set of ADVANCE CORK INSERT LININGS and do away with the expense and nuisance of having the transmission relined every two or three months. Not only will it *outwear three sets of*

*any other kind on the market*, but it will give far better service, *while* it is lasting, too. They give an ease of action in the Ford transmission that is unparalleled by other lining even when new.

### ---DEALERS' COUPON---

Advance Automobile Accessories Corp.,  
Dept. E7-1, 56 E. Randolph St., Chicago  
Please send one set of Advance Cork Insert Linings on regular dealer's terms.

Name .....

City.....State .....

My Jobber's name is .....

### Dealers: Order From Your Jobber

The demand for "Cork Inserts" is big right now. Your jobber has them. Order from him or us. Mention his name. He'll get full credit. Get ready for the big volume of sales which will follow this advertising. Send the coupon.

**Advance Automobile Accessories Corp.**

Dept. E7-1, 56 East Randolph Street, Chicago, Ill.

gan. Make the customer pay his bill before the car is taken out. This should be made the rule until the law has been amended and extends the proper protection to the garageman. In Illinois, New York and many other states, as in Michigan, the lien is also lost when possession is voluntarily surrendered, or even when the owner obtains possession without the garageman's permission.

### Castor Oil a Coming Factor in Automobile Lubrication.

By Walter T. Rice.

Those who have been following the speed contests in the last two years, endurance runs, hill climbs, etc., find that a compound other than mineral oil is being used; for instance, the most successful cars in these contests are using a compound of pure castor oil, other vegetable oils and mineral oils.

It is acknowledged that pure castor oil has no equal in the world for its peculiar method of lubricating under the most severe and extreme circumstances. Experiments have been going on for several years trying to use castor in internal combustion engines and it was found that castor in itself proved all that it was claimed for it with the exception of one or two technical faults which had to be eliminated: for instance, it was found that this oil in its pure state would form a gum instead of a carbon. Two years ago an oil was discovered that could be readily balanced with castor oil that removed this bad feature and another oil was found that neutralized all the acid that the castor contained and in this way was compounded a lubricant that is acknowledged to be the first and only perfect oil for proper lubrication of an internal combustion engine.

Every car owner should use a castor compound in his motor, a castor compound in his transmission, and a castor compound in his axle and in this way insure his car getting the least possible wear. There are features other than the good lubricating qualities of castor oil, that in itself prove beyond a doubt that a compound of this form lubricates one hundred per cent better than a pure mineral proposition with far less retard to all working parts. It is further known that this castor compound added to a high class mineral oil prevents the gasoline fumes which seep by the piston in a working motor from destroying the viscosity of an oil. This seepage is also reduced fully eighty percent as the filaments around your pistons form a strong resisting wall for these vapors to penetrate through. These two features in themselves insure far greater economy than any other oil on the market could possibly give.

## Woman Dealer in Drive-Away

Leads a Drive-Away from Detroit to Southern Nebraska — Winter or Summer, Cars Are Delivered

MRS. ZONA BERG, Superior, Neb., is an auto dealer who makes it a point to fill orders whether the railroads will help along the affair or not. When cars are needed and do not come forward by freight she sends after them and has them driven back, although the distance be-

Brothers car can plow, skate, wade and swim. A high wind drifted snow over the roads in Michigan and as I led the party, I broke the roads, occasionally being shoveled out. To our party, however, that was good sport.

We stopped in Chicago a day and received numerous courtesies from your dealer



tween Detroit and Superior is 1,200 miles.

Mrs. Berg acquired national fame last winter when she lead a drive-away of four cars from the Dodge Bros.' plant in Detroit to her home town, when there was snow and sleet on the ground and driving was at its worst. Mrs. Berg is old enough not to have a chaperon, yet her mother, who is 58 years old and made of the same stuff as the daughter in point of grit and a relish for adventure, went along with her. Mrs. Berg drove one car, her 12-year-old son, Jack, drove the second car, and two of her salesmen-mechanics drove the third and fourth cars. The temperature ranged from 15 degrees above to 15 degrees below zero during the trip.

The illustration shows Mrs. Berg and her mother. A telegram was sent by Mrs. B. to Dodge Bros. after she had reached home on completing that memorable trip. It is characteristic and interesting and follows:

Arrived home yesterday, finest kind of shape. Positively no car trouble and very little tire trouble. Jack's car came through without a puncture. We proved the Dodge

there. From Clinton, Ia., to Marshalltown we traveled over ice and Charlotte (famous fancy skater) does not have anything on a Dodge Brothers car when it comes to skating.

Western Iowa was a sea of water. We ran through swollen creeks and were held up at West Side until the flood receded. Mighty proud to say we found our best roads in Nebraska. Pleasantly greeted in Omaha by the Dodge Brothers' dealer. Spent Sunday in Lincoln. We all want to make the drive over many times. I drove my car the entire way without a particle of fatigue. Mother enjoyed roughing it as much as the rest of our party.

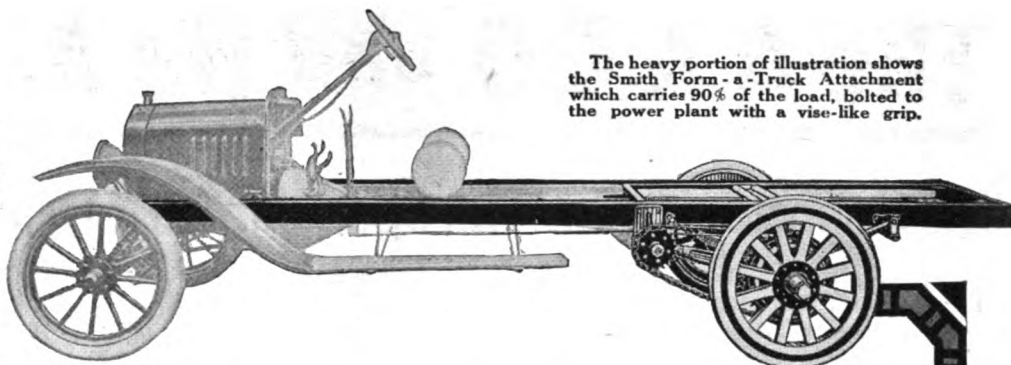
Inquiries are coming in from Nebraska and Kansas dealers as to the success of our trip. It cost little if any more than actual freight and, as I see it, one can not afford to close up shop on account of freight car shortages.

Mrs. Berg's territory comprises four counties, two in Kansas and two in Nebraska. When her supply of cars dwindles and the outlook for freight shipments becomes hopeless, she wires the factory, asking if she can have the cars if she comes or sends for them. This is the spirit that has made her one of the most successful dealers in the far Middle West.

# Smith Form-a-Truck

## \$350

f.o.b. Chicago



The heavy portion of illustration shows the Smith Form-a-Truck Attachment which carries 90% of the load, bolted to the power plant with a vise-like grip.

## There is a Big Premium on Smith Form-a-Truck Dealerships this Year

**I**F you can qualify as a Smith Form-a-Truck dealer—if your territory is still open, now is the time to act. Only the livest, dealers are being considered.

Many of the real business getters—men with the reputations for making big profits—who have built up enormous business—have moved to entirely new sections of the country where there were Smith Form-a-Truck dealerships available—

They know the money that is to be made.

And every established Smith Form-a-Truck dealer now can place a high cash value on his dealership.

Smith Form-a-Truck has exceeded every other achievement in the motor truck industry by a tremendous percentage—built up an industry of its own in less time than many manufacturers take to start their preliminary work.

Smith Form-a-Truck is the answer to the delivery and hauling question for every user of motor drawn or horse drawn transportation in the country.

Fleet orders from the big national buyers run up into several hundreds at a time.

Individual buyers total high into the thousands.

Production has already reached the amazing total of 350 a day to keep pace with orders for immediate shipment.

More Smith Form-a-Trucks are being built each month than all other makes of attachments combined, built for a year.

More in a month than any other manufacturer of motor trucks builds in a year.

Measured by any standard of earnings, dealer profits in Smith Form-a-Trucks are from 500% to 700% greater over a given time than any other make of motor truck.

Sales are faster—investment is less—and your money is turned with amazing rapidity. With the heavy premium already set on established Smith Form-a-Truck dealerships. There is always room for the right man—somewhere.

If you are a dealer who can qualify—who can maintain the high business standard maintained by the entire Smith Form-a-Truck dealer organization—there is a chance for you somewhere.

We are ready to receive your application—to show you just what we can do for you. But do not delay in getting it in. Wire today.

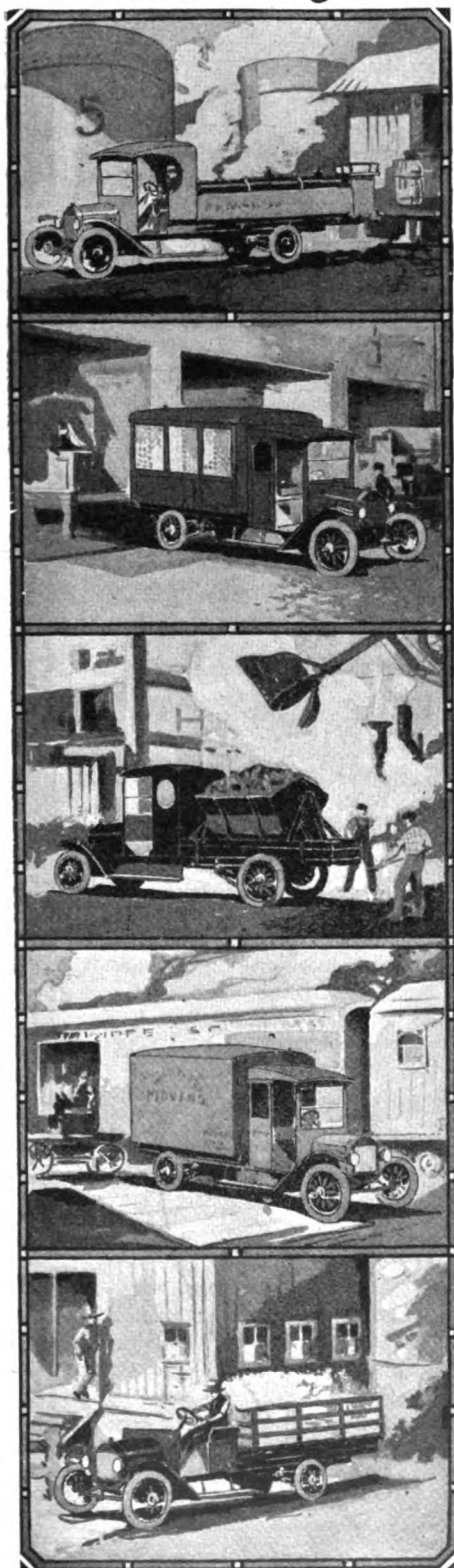
## Smith Motor Truck Corporation

Manufacturers of Smith Form-a-Trucks

Executive Offices and Salesroom, Smith Form-a-Truck Bldg.

Michigan Boulevard at 16th St., Chicago

Eastern Branch, 1834 Broadway, New York      Kansas City Branch, 1808 Grand Ave.  
Pacific Coast Branch, Pico and Hill Streets, Los Angeles  
Southern Branch, 120 Mariette St., Atlanta





# The A.A.G.O. and its Activities

## An Opportunity for Garagemen, Auto Dealers and Repairers

THE association movement in the retail branch of the automobile industry has not been anything like a large success up to the present time. At first fly-by-night promoters went out after memberships, confining their activities to exchanging artistic certificates of membership for cash. Later on and overlapping these earlier activities, serious efforts by honest people, in a fragmentary way, were made to organize garagemen, repairmen and dealers. Local associations here and there were created and state bodies were formed. The history of this movement is so well known and comment has been so widespread in the motor press as to the lack of success that little reference need be made here.

### A Brief Outline.

A few sincere, aggressive and tenacious leaders have "held the fort," but the rank and file have miserably failed in giving them the support merited and essential to develop the strength necessary to enable anything like the largest measure of successful work to be done.

In the national field the fly-by-night promoter was succeeded by men of character and earnestness, and some really important work was done. Again we find that the retail and service trade at large failed to co-operate and make the movement a success. The leaders became discouraged and, one by one, fell away. This describes the fate of the Associated Garages of America.

When the American Association of Garage Owners was organized in a national way, the germ from which it sprang having been planted some years before in a local way, the field was riper for serious and continuous action than ever before. Both experience and character were requisitioned in its leadership. The one objective point of its first efforts was to gain the confidence of its prospective clientele. The measure of success with which it met is told in the annual message of the retiring first national president, Mr. John C. Phelan, when he stated that something like 12,000 garage men, dealers and repair shop owners became individual members of the organization during the first year, and its official publication, the AMERICAN GARAGE AND AUTO DEALER, secured a circulation of something like 14,000 during that same period. The organization made this headway, not so much upon promises of what it *would do* as upon demonstration and proofs of what it *was actually doing* in the way of rendering service to

its members through its Collection Department, Legal Department, Mechanical and Engineering Department, Publicity Department and Insurance Department.

During a portion of the time that the American Association was laying its foundations and rearing the structure of a strong, compact and responsive membership, another organization known as the National Automobile Trade Association has become somewhat active, extending its operations more especially into the dealer trade. This organization and the A. A. G. O. overlap to some extent because in some localities the dealer element, large and small, are lined up with the American association and are doing effective work in it.

### Confusion Leads to Conference.

During this period some confusion has existed in the minds of manufacturers, jobbers and other members of the allied trades as to which of these two organizations really represented the retail and service branch of the industry, and unfortunately a tendency was fostered and developed which created suspicion and friction between those who have been and are active in the work of the two organizations.

Happily, through the suggestion of members of both groups, and inspired by a common desire to promote the welfare of a just cause, Mr. J. C. Thorpe, general director of the N. A. T. A., and Mr. C.

M. Carr, secretary-treasurer of the A. A. G. O., held a conference, during which the general retail and service situation from an organization standpoint was considered, and it was practically settled that so far as their interest and influence would affect it, from now on there will be friendly co-operation between the two organizations.

It has been urged by those best acquainted with conditions that every effort should at this time be wisely put forth to unify the forces to such an extent as will lend to the present movement a power for good not yet attained and an energy calculated to give the retail branch of our business that prestige and protective ability which it deserves to wield.

### Retailer the Dominant Trade Factor.

The history of organization in other branches of business proves that *retailers when thoroughly and competently organized wield a power for good far beyond that possessed by any other branch of the trade*. Retailers and service men are next to and in close relation with the public or ultimate consumers. They are more numerous than any other branch of the trade or all other branches combined. Therefore they are the most difficult to organize but, *when organized, they are easily able to dominate the trade and industry of which they are a part*.

Moreover, the retail and service man is a small business factor and, *standing alone, he is practically helpless*. All of the abuses attending the creating a new industry or the growing up in an old one generally culminate in a disregard of the just rights of the retailer. The jobber and the manufacturer as a rule is a larger unit, and being more or less a capitalist within certain limitations, he is capable of taking care of himself. This is not true of the retailer, except in isolated cases where the retailer is a "merchant prince."

The automobile industry is growing by leaps and bounds. The retail and service branch is keeping well pace with developments. It is the "under dog" in the scramble for profits. The manufacturers get "theirs" because they are well organized. The jobbers get "theirs" because they compel it through an organization that has a large membership and works through aggressive, efficient and comprehensive policies. *The opportunity of the retailer and service man is even greater than that of the jobber or manufacturer, and the opportunity is measured by the greater needs of our craft for organization benefits and protection.*

**AMERICAN GARAGE  
AND AUTO DEALER**  
Official Publication of American  
Association of Garage Owners  
**NATIONAL HEADQUARTERS**  
58 W. JACKSON BLVD., CHICAGO  
Telephone Harrison 5672  
Branch Offices, New York and Detroit



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### DEPARTMENTAL BUREAUS

Organization Collections Publicity Insurance  
Employment Mechanical Legal Sales  
Account's Cost Find's Purchasing Information



## The Secret of "Small Up-keep" is Perfect Lubrication

The first cost of an automobile is important, but what does it cost you to run it? That's more important. Is your car laid up frequently—scored cylinders—burned out bearings—smoky spark plugs?

Use **Polarine**  
FRICTION REDUCING MOTOR OIL

A perfect lubricant that covers even the remotest friction surface, protecting every wearing part and reducing friction to the minimum. Friction minimized means repairs minimized and increased power as well.

Polarine flows freely at zero and maintains the correct lubricating body at any motor speed or temperature.

Order a half barrel today. It's cheaper that way than in smaller quantities.

Standard Oil Company (Indiana) Chicago, U. S. A.

Use Red Crown Gasoline and get more power, more speed, more miles per gallon

14a

### Get Together and Do It Now.

Let us all *get together, work together and win together*. Other retailers have done it, and so can we. It should not be a question of desire but of expediency. We may not want to do it but we *must* do it. The one-sided car contracts, the sale of goods by jobbers to our best customers, our failure to secure discounts on all the

parts we are compelled to handle in our repair work, and a hundred other conditions *cry aloud for an organization* like the A. A. G. O. through which relief can be gained.

*Let the spirit of tolerance, friendship and unity prevail.* Let the leaders in local, state and national organizations set a good example for the rank and file to follow.

*Mass the forces of the retail and service trade against the abuses we now labor under and smash the lines of those who are too busy to consider our problems or too narrow and selfish to understand that the prosperity of an industry is wrapped up in the welfare and success of the retail and service branch thereof which caters directly to the ultimate consumer.*

## Garage and Auto Trade Insurance Problems

**G**ARAGEMEN, dealers and shopmen have a wonderful institution in the Insurance Department of this organization and are not taking advantage of it to the extent that its merits deserve. There is not a problem that you encounter in connection with your insurance, both fire and all of the forms of casualty, in relation to which this department cannot render invaluable assistance. It is not only a question of *saving money*, but the question of *giving increased protection or adequate coverage* is involved.

We want every garageman, dealer, repairer and supplyman connected with our industry to get in touch with this Department and put up to it all of their problems, no matter what phase of it is troubling them. The advice and counsel you will receive is *absolutely free* and is worth hundreds of dollars annually to many of our people.

### Guarantees a Saving.

The actual saving is worth while. The Department guarantees absolutely on every form of insurance a *saving of 10 per cent*. This is *minimum*, and the experience of the department thus far has shown that *as high as 70 per cent has been saved* by the beneficiary. As has been stated in this department of the AMERICAN GARAGE AND AUTO DEALER, as well as in other departments of the journal editorially and in a news way, one dealer saved \$425 on one year's fire insurance alone.

It has also been indicated that under present conditions the Department can deliver but a *fraction of the results* it will be able to deliver after retailers come to its support in sufficient numbers to put the Department on a thorough going *inter-insurance basis*. This requires that each group or class of risks represent a sufficient volume of business to make effective in working out the inter-insurance principle. These groups are not necessarily large, and with red hot co-operation on the part of our trade, every one of the groups could be completed in 90 days.

### Simplest and Best Insurance.

*Inter-insurance is the simplest and most effective form of insurance.* It is in reality insurance on a co-operative basis at cost. In the case of the A. A. G. O. Insurance Department it is under the supervision of the Insurance Department of the State of Illinois and has been properly

### A Message from the National Automobile Association Tourist Bureau in All Principal Cities.

SHREVEPORT, La., April 28, 1917.  
AMERICAN Ass'n of Garage Owners,  
Mr. C. M. Carr, Sec'y,  
Chicago, Ill.

Dear Sir:

I read with disappointment in the April issue of the AMERICAN GARAGE AND AUTO DEALER that your Lien Law in Ohio was defeated by car owners' influence. We wish to go on record as being favorably inclined toward your Lien Law, and if we can be of any assistance in any way possible in having this law passed in any of the States in the Union, command us.

Mr. Cox, of the Southern Tire Company of Beaumont, Texas, has drawn up a Lien Law which is to be presented at the next session of the State legislature of Texas, by the Hon. Steve King, of Beaumont, Tex. We have written Mr. King and several of the legislative body urging them to push this bill, as we believe it is of as great an advantage to the car owner as it is to the garage man, because we have found that the honest man has to pay the dishonest man's debts, not only in the garage business, but in every business.

We also believe that with a good, stiff lien law in the state, many deserving honest men could receive credit where under the present laws in some states the garage man is afraid to take a chance.

Trusting we will be able to assist you in your noble work, we remain, Yours very truly,  
NATIONAL AUTOMOBILE ASSOCIATION,

C. W. VALREZ, Sec'y.

authorized by the State Superintendent of Insurance. This makes it the *safest kind of insurance*.

Through inter-insurance the garage and retail auto industry will not further be required to participate in the hazards of general insurance which include all of the dangerous occupations and risks carrying the highest rates. So far as we know, the Insurance Department of this organization will be the only inter-insurance organization confined *exclusively* to the retail automobile industry. *Your insurance will then stand absolutely upon its own bottom, paying its own way, and thereby saving all of the excess costs which accrue to carrying part of the burden properly attaching to all of the more hazardous lines of business.*

Mr. Matthew White, insurance commissioner of the A. A. G. O., would like to hear from each one of you. Writing him will involve no expense to you, but *will give you information as to what this Department can do for you and deal with costs, savings, etc.* WRITE NOW.

### Even 10 Per Cent Worth Saving.

Why should we not all get busy on this matter at once. With leading garagemen making between 3 and 4 per cent net on their turnover, it behooves the rank and file to consider very seriously an insurance proposition that absolutely guarantees a saving of 10 per cent on their present insurance costs, with a chance of the saving being very much more; and it *also behooves every garageman, dealer and shopman to get in behind this Department and push in order that the inter-insurance principle can be immediately utilized, thereby raising the A. A. G. O. Department's guarantee of saving to a minimum of 30 per cent and practically insuring a saving in all cases of 50 per cent or better.*

### Touring Season On—Display Your Sign.

Display your Association sign. The yellow and black metal sign with flange for fastening on the outside of your garage should be displayed by every A. A. G. O. member because *it will bring him trade from motor tourists.*

The motor clubs and newspapers of the country have given the maximum prices designated by this Association wide publicity and the yellow sign lettered in black

# WHAT YOU WANT - WHEN YOU WANT IT

That's the whole idea of Stevens Service Cabinets. Your stock is kept in a clean, orderly manner; but little floor space is occupied, and you can select your part at any time without inconvenience or delay. It also adds to the dignity and appearance of your place of business, and will pay for itself in time saved.

Our new unit construction builds up like a sectional bookcase. Any combination can be built up and added to from time to time as desired.

Stevens Service Cabinets have a frame of heavy oak with rich antique finish. Drawers have finished oak fronts with combination pull and card holder; they cannot stick as the sides and bottom are made of heavy galvanized steel. Cross divisions may also be obtained.

Ask about our "Handy" Service Cabinet, which is particularly suited to Garage and repair-shop needs. They are interchangeable and may be built up into sections of any size.

Cabinets shown are designed for dealers and garage-men, and prices are F. O. B. factory.

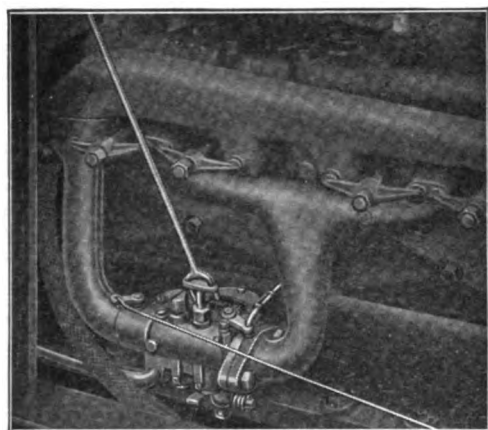


Cabinet Assembly No. 280—net dealer price, complete, \$56.70. No. 280½ (one half width and number of drawers), one-half above price.

**STEVENS & COMPANY**  
**374 BROADWAY** **N. Y. CITY**

Cabinet Assembly No. 281—net dealer price, \$84.90. No. 281½ (half width and number of drawers), half price.

## Model N Marvel Carburetor



Model E Marvel Carburetors are standard on Buick, Olds and Oakland.

Model E Marvel Carburetors greatly improve Overland and Studebaker cars.

Designed especially for Ford Cars. Fits right in place of regular installation—no changes whatsoever.

Improves car performance and increases mileage to 22 to 25 miles per gallon. Sold on thirty days trial with money back if not satisfactory. Retail for \$8.00 complete.

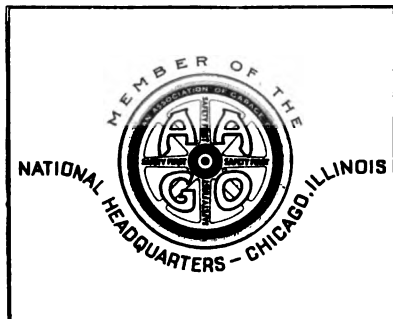
Catalog on application.

**MARVEL CARBURETOR COMPANY**  
FLINT, MICHIGAN, U. S. A.



shown herein means *fair treatment* to tourists who see it. It means that they can drive into your garage and be taken care of without running the risk of being gouged.

If you have no sign, send for one at once. Price, \$1.00, prepaid. You must be an A. A. G. O. man in good standing and obligate yourself not to charge over the



A. A. G. O. maximum prices, which are as follows:

Repairs and Storage.			
	Towns of 10,000 and over.	Towns under 10,000.	
	Per hour.	Per hour.	
Machinist, Class A.....	\$1.00	\$.75	
Helper, Class B.....	.60	.50	
Apprentice, Class C.....	.40	.30	
Tourist Storage—			
Per day.....	1.00	.75	
Per week.....	5.00	3.00	

These are *maximum* prices and *lower prices may be charged* if compatible with fair and just profits.

Fellow members, make this sign of ours stand for honest, courteous treatment and fair and just prices in the eyes of the public. This is a co-operative work that will raise the standard of respect for our craft in the eyes of those upon whom we depend for our continuous and permanent success.

### The Chicago Registration Ordinance

The enforcement of the garage registration ordinance in Chicago by the police department has elicited a storm of protests from garagemen and car owners. Hundreds of complaints reached the A. A. G. O. offices, and Secretary Carr accordingly went to the city hall to ascertain what could be done.

On Tuesday, May 1, he appeared before the Judiciary Committee of the council and related the hardships in compliance with the terms of the ordinance entailed upon the garagemen, some of them in the downtown district requiring two additional clerks to keep the records required of cars going in and out of the garage.

Mr. Carr states that the garagemen of the city were willing to reasonably co-operate with the police in their work of locating stolen cars, but that the greater part of the detail labors required of them was useless, such as the registering daily of cars brought in and taken out by regular or occasional customers personally known to the garagemen, and urged that this class of trade should be excluded from the operations of the ordinance, confining its application to transient cars.

# Lien Law Passed in Oklahoma

Sam Pledger and other A. A. G. O. members in Oklahoma led a movement to secure the passage of a garage lien law for Oklahoma and, with the help of the general machine shop proprietors of the state, succeeded in getting a fairly good law on the statute books. It is not all they had hoped for, but it is a large step in the right direction and is now in full force and effect. The full text of the law follows:

An Act providing for a lien on personal property for labor, money, material or supplies in the producing of, altering or repairing of said personal property, repealing Section 3858, Revised Laws of Oklahoma, 1910, and providing a procedure for foreclosing lien, and declaring an emergency.

Be It Enacted by the People of the State of Oklahoma:

Section 1. Any person, firm or corporation who furnishes labor, money, material or supplies for the production of, altering or repairs of any personal property at the request of the owner of said property, shall have a lien for the value of his money, labor, material or supplies upon said personal property as provided for in Section 2 of this Act, lien to date from commencement of furnishing of labor, money, material or supplies.

Section 2. Any person entitled to a lien under this Act, shall within sixty days after last furnishing of labor, money, material or supplies for the production of, altering or repairing of said personal property, file in the office of the County Clerk of the County in which the property is situated a statement in writing verified by oath, showing the amount of labor, money, material or supplies furnished for the producing of, altering or repairing of said personal property, the name of the person for, and by whom labor, money, material or supplies, was furnished; unless the person entitled to

such lien shall file such statement within the time aforesaid, he shall be deemed to have waived his rights thereto; Provided, that the lien provided for in this Act shall not attach to any personal property after it has been purchased by an innocent purchaser for value, and has passed into his possession unless the lien shall have been filed with the County Clerk of the County before the property was purchased by such purchaser, or he shall have received written notice, from the party entitled to the lien, of his intention to file the same.

Section 3. The lien herein provided for shall be subject to prior mortgage liens, unless the holder thereof has received notice of the intention of the furnishing of said labor, money, material or supplies and consents thereto in writing, after which the holder of such mortgage lien shall become jointly liable with the owner of said property for the expense of producing, altering or repairing of same.

Section 4. Said lien may be foreclosed by the sale of the property so covered any time within twelve months in the same manner provided by law for the foreclosure of chattel mortgages.

Section 5. Any person selling or disposing of property covered by such lien, without the written consent of the owner of such lien shall be guilty of a misdemeanor.

Section 6. It shall be the duty of the holder of the lien under this Act when the same is satisfied to immediately file a notice of discharge thereof with the County Clerk of the County wherein the lien is filed. Failure to do so shall subject the holder of the lien to a fine of not less than Twenty-Five (\$25.00) Dollars nor more than One Hundred (\$100.00) Dollars.

Section 7. Section 3858, Revised Laws of Oklahoma, 1910, is hereby repealed.

Section 8. For the preservation of the public peace, health and safety, an emergency is hereby declared to exist by reason whereof this Act shall take effect and be in force from and after its passage and approval.

On motion of Alderman Long a sub-committee of three was appointed (Aldermen Powers, Coughlin and Long) to draft an amendment to the ordinance which would carry into effect this idea, and Mr. Carr and Ass't Chief Westbrook of the police department, who was present and endorsed the idea, were requested to confer further with the sub-committee. Assistant Corporation Counsel Cleveland, who had previously been interested in the matter by Secretary Carr, has consented to act with the sub-committee and frame the amendment. No opposition to the proposed change has been expressed, and the ordinance as amended and applying to transient cars will not be objectionable to the garage trade and yet prove just as effective in apprehending stolen cars as the original ordinance.

### Standardization Price Work.

J. J. Lyddy, A. A. G. O. field representative, is doing some excellent work in price standardization—no price-fixing that is prohibited by the Illinois statutes, but prices uniformly built upon a correct understanding of cost and a fair profit for

service, on merchandise sales, etc. Mr. Lyddy has been working in Chicago for some months past and will continue the good work here.

### Pay Your Association Dues.

A large number of A. A. G. O. members owe this year's dues and are requested to pay now and thus help the good work along.

The association has been doing much valuable, constructive work, helping in numerous legislative fights, co-operating with other organizations in a way that gives our branch of the trade a voice in the affairs of our industry, and otherwise performing useful service.

Invoices will be sent you, and your officers bespeak a prompt and hearty response. The dues are \$4.00 and the subscription to the journal \$1.00. You may have already been billed for your journal; if not, you will be. The two accounts are being kept separate.

Fellow members, the association treasury needs replenishment. We spend the money in your behalf as fast as we get it.

# Two MARVEL Cylinder Reboring Machines piled up \$16,000 reboring bus- iness for one garage

This sounds pretty strong but if you have any doubts about it, write for our booklet entitled "Proof." It contains a copy of the original letter from a prominent Minneapolis automobile dealer telling how his repair department in one year did \$16,000 worth of business with two MARVEL Cylinder Reboring Machines.



This machine is proving a money maker for garages and repair shops all over the country. It handles any type of cylinder block from one to twelve cylinders of from three to eight inches in diameter.

The MARVEL often increased the repair business as much as 100% in two or three months after installation.

It can be operated by your present force of mechanics. Pays for itself in a remarkably short time. Full particulars, prices and terms upon request.

## MARVEL MACHINERY CO.

1301-1307 S. Third St.

Minneapolis, Minn.



**MAKES  
YOUR  
REPAIR  
SHOP  
BUSINESS  
PAY!**

# ROMORT AUTOMATIC AIR VALVES

## The Service Station's Friend

Style A



List Price \$3.00

hard, rough usage. Air is released only when the Valve is pressed on to the tire. Equipped with the famous Romort Pump Connection Rubber.

Style A Description

A guaranteed device that has no equal for free air stations. Will withstand any rough or hard usage and abuse. Recommended for any free air station or air storage plant, repair shop or any station that is subjected to

Style B Description

The Style B Automatic Air Valve is recommended for free air stations requiring a small and inexpensive air device. Stem fits any sized tubing, automatic in opening and closing, and guaranteed air-tight. We strongly recommend this Valve for private or public garages, vulcanizers, tire repair shops, etc. Equipped with Romort Pump Connection Rubber.

Style B



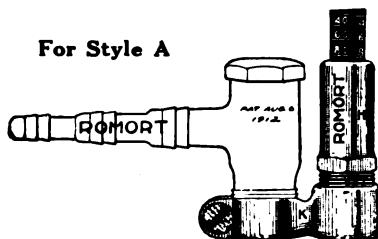
List Price \$1.00

# ROMORT TIRE TESTER ATTACHMENT

## A Garage Necessity

List Price \$1.50

For Style A

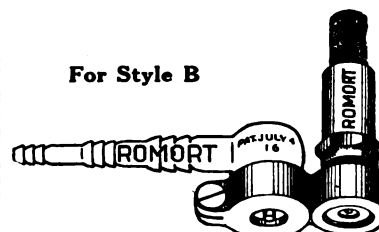


A device for attaching your gauge to either Style A or Style B Air Valves, and gives the service station a permanent holder for its gauge, ready for instant use by the public. Simply screw your gauge onto the holder and you have a tire tester and tire inflater combined in one, and the old trouble of losing gauge is forever over. We sell only the holder attachment. Every garage with free air should be equipped with the Romort Tire Tester Attachment.

Caution.—When ordering, state whether for Style A or Style B Valve.

For Sale by All Jobbers

For Style B



**ROMORT MANUFACTURING CO.,**

**Seattle—Chicago**

## Veteran Auto Industry Founder Makes Change.

Will H. Brown, one of the founders of the automobile industry, has recently taken the helm as director of sales for the Elgin Motor Car Corporation of Chicago. The Willys-Overland Company, of which Mr. Brown was vice-president and assistant general manager, stands today as a monument bespeaking the tremendous constructive ability of its founders, among whom



Will H. Brown.

Mr. Brown was one of the most prominent figures.

Before the days of automobile trade journals, the leading newspapers of the country pictured together such automobile veterans as Elwood Haynes, Will H. Brown and Henry Ford. Back in 1907 and 1908 it was commonly thought that the automobile was but a passing fancy, and that within a short time its last vestige would vanish, leaving nothing but a record of dismal failure upon the pages of history. During those stormy days of uncertainty, every leading newspaper in the country, including magazines, contained interesting articles, from time to time, in defense of the automobile by Will H. Brown, who, it has since developed, was a real prophet in the industry.

## One Way of Meeting Car Shortage.

Dr. J. H. Turner, president of the Chief Oklahoma Auto and Garage Co., Shawnee, Okla., sells a broad line of cars. He writes:

"We have found it advantageous to handle several car agencies that do not conflict for many reasons. First, our experience has proven that when in greatest need of a car of a particular make there is a shortage in delivery.

"We have something to sell in its place if we do not have the car that is desired;

furthermore, we have calls for cars to suit every customer's pocketbook and requirement.

"We have but two salesmen working in Shawnee, but have several sub-agents.

Commenting on Dr. Turner's statement, it may be said that we are inclined to believe that the automobile dealer should be privileged to handle as many cars as he can sell to advantage and we are rather of the opinion also that in the future the successful dealer will not confine his energies to one make, for the reason so well expressed by our Oklahoma friend.

## Advertising as Looked Upon by Many Dealers.

BY H. H. NELSON, ROSELAWN, IND.

The writer has been showered with a string of letters from an automobile advertising agent who pretends to have chosen me from all the other business men

in town as being the most competent and able salesman in this burg to handle their product.

After I had answered the inquiries and given them the facts regarding sales prospects they still insist on contracting on the ground that "yours truly" is the only man that can handle the territory.

By chance I came in contact with a similar letter written to another business man in town. Oh, me, oh my! Is the advertiser looking for a man to do an honest business for him? Or is he looking for a man that he can unload his products on, regardless of how the dealer comes out?

Many dealers are wise to this class of advertisers. They invite opposition. It is not the most popular and largest advertised article that is always best. Proved efficiency in man or machine is the best advertising. Fair representation helps the dealer to be efficient and invites co-operation instead of opposition.

# American Garage and Auto Dealer Gasoline Rate Chart

A Ready Reference Table for the Garage and Supply Station Man

Gal.	Cents																													
1	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30									
2	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60									
3	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90									
4	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96	100	104	108	112	116	120									
5	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150									
6	60	66	72	78	84	90	96	102	108	114	120	126	132	138	144	150	156	162	168	174	180									
7	70	77	84	91	98	105	112	119	126	133	140	147	154	161	168	175	182	189	196	203	210									
8	80	88	96	104	112	120	128	136	144	152	160	168	176	184	192	200	208	216	224	232	240									
9	90	99	108	117	126	135	144	153	162	171	180	189	198	207	216	225	234	243	252	261	270									
10	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300									
11	110	121	132	143	154	165	176	187	198	209	220	231	242	253	264	275	286	297	308	319	330									
12	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360									
13	130	143	156	169	182	195	208	221	234	247	260	273	286	299	312	325	338	351	364	377	390									
14	140	154	168	182	196	210	224	238	252	266	280	294	308	322	336	350	364	378	392	406	420									
15	150	165	180	195	210	225	240	255	270	285	300	315	330	345	360	375	390	405	420	435	450									
16	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432	448	464	480									
17	170	187	204	221	238	255	272	289	306	323	340	357	374	391	408	425	442	459	476	493	510									
18	180	198	216	234	252	270	288	306	324	342	360	378	396	414	432	450	468	486	504	522	540									
19	190	209	228	247	266	285	304	323	342	361	380	399	418	437	456	475	494	513	532	551	570									
20	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500	520	540	560	580	600									
21	210	231	252	273	294	315	336	357	378	399	420	441	462	483	504	525	546	567	588	609	630									
22	220	242	264	286	308	330	352	374	396	418	440	462	484	506	528	550	572	594	616	638	660									
23	230	253	276	299	322	345	368	391	414	437	460	483	506	529	552	575	598	621	644	667	690									
24	240	264	288	312	336	360	384	408	432	456	480	504	528	552	576	600	624	648	672	696	720									
25	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625	650	675	700	725	750									
26	260	286	312	338	364	390	416	442	468	494	520	546	572	598	624	650	676	702	728	754	780									
27	270	297	324	351	378	405	432	459	486	513	540	567	594	621	648	675	702	729	756	783	810									
28	280	308	336	364	392	420	448	476	504	532	560	588	616	644	672	700	728	756	784	812	840									
29	290	319	348	377	406	435	464	493	522	551	580	609	638	667	696	725	754	783	812	841	870									
30	300	330	360	390	420	450	480	510	540	570	600	630	660	690	720	750	780	810	840	870	900									

Cut out and post near your Gasoline Pump and Tank.

Originated by the J. P. Gordon Co.

# \$250 in Gold for the Best Slogan

We need a good advertising SLOGAN for VULCAN Springs and in order that you may successfully compete, we submit an outline of our policy and aspirations.

## QUALITY

VULCAN Springs have and shall always carry the highest standard of quality—only the good endures.

## SERVICE

VULCANS are today made in 588 different types, and in our five direct branches, we actually stock over 80,000 springs. Today good assorted stocks are available in over 1800 cities, and in a few years, we propose to cover 8000 cities, showing well chosen stocks with reliable dealers.

## FIT

We assume the high salaried engineers who design cars nowadays are on their mettle to produce the best designs. In every case our springs must be an exact duplicate of the spring they are intended to replace.

## HONEST TRUTH

We confine our appeal to the merits of VULCAN Springs, and it has always been and always shall be our endeavor to tell the absolute truth regarding the quality of our product and the extent of our service. VULCAN Springs are as durable as

the best grade of material and most careful workmanship can make them. We mention this because good intent is a valuable consideration in the making of a slogan.

## TO SUM UP

VULCAN SPRINGS must be immediately available to the man who needs them, and he must be so impressed with the quality, fit and service, that he will come back for more. Our copyrighted trade mark shows on every Spring. Liberal discount to the trade. Now cut this out and send us a good slogan.

## Rules of Contest

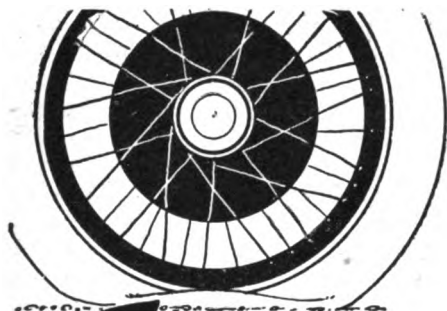
- 1 Contestant must be associated in some branch of the Automobile Industry either as Dealer, Jobber, Repairer or salesman of cars or accessories. Carriage and Wagon Makers and general Hardware and Sporting Goods trade not barred. Any employee of above concerns also eligible.
- 2 Slogan must be submitted on letter head of above named trades, and no writing within two inches of slogan. Contestant's name and address must be plainly written below.

- 3 If several contestants submit the same slogan, in case of acceptance, the full amount will be given to each. Contest closes July 15th.

**Jenkins Vulcan Spring Co.**  
St. Louis, Mo.

*Factory Branches Carrying  
Complete Stocks*

ST. LOUIS	- - -	1402 Chestnut
MINNEAPOLIS	- - -	1024 Hennepin
READING, PA.	- - -	538 Franklin
FORT WORTH	- - -	708 Commerce
SUMTER, S. C.	- - -	29 Caldwell



*This  
Never  
Happens!*

*To a Tire That is Filled  
with*

## National Rubber Tirefiller

**Because:—**

These rubber sections laid end on end in the shoe take the place of an air-filled rubber tube—a perfect substitute with several times more efficiency, firm, resilient, never blows out, no punctures and longer lasting tire.

**Dealers:—**

Motorists are beginning to realize the value of National Rubber Tirefiller and are using it with surprising results. Write for our agency plan.

**NATIONAL RUBBER FILLER CO.**

MIDLOTHIAN, TEXAS



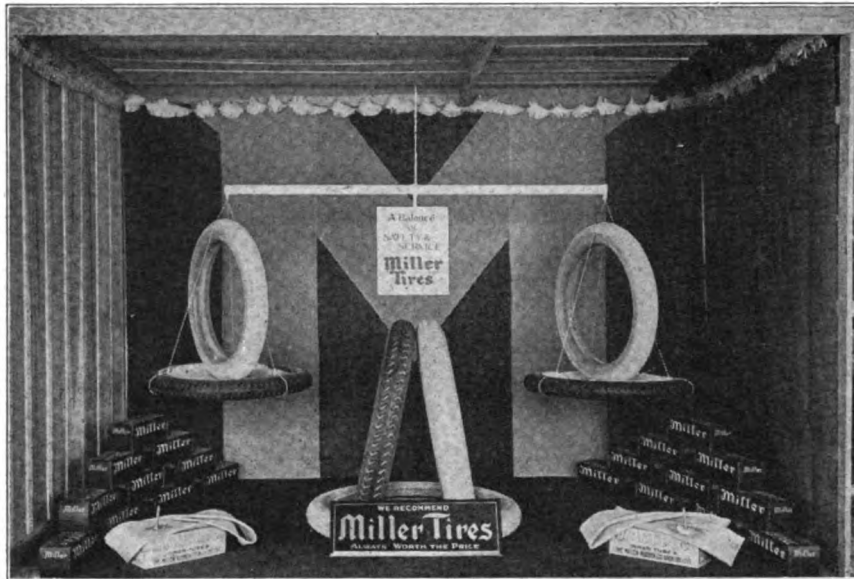


# Make Your Windows Pull

## Suggestions by Miller Rubber Company and One of Its Window Displays

The Miller Rubber Co., Akron, Ohio, is making two window displays a week. These displays are photographed and copies of the photographs sent to each Miller

Golden yellow is a good color—but keep green away from it. It works well with the middle tones of blue or with the lighter purples. Rose shades and light



agent. Practically all the agents use the photographs as models.

Some of the Miller suggestions are well worth following. Several are noted as follows:

Make your windows say something. Make them say that you are always on the job. Put the "come-hither" into them. Make them invite attention.

Use color freely—but with judgment. Orange and black or orange and purple or orange and blue are good—but orange and red should not be used together.

Bright reds and greens don't agree. Reds and purples are not on speaking terms. Blues and reds are hard to handle.

apple greens go well together, and so do olive green and blue.

The colors you use should vary according to the seasons. Oranges, reds and yellows are popularly called warm colors and have a stronger appeal than blues, greens and purples. Ordinarily the warm colors go best in spring or fall. On a blistering hot July or August day the eye prefers to see cool blues and greens.

A spot of very vivid color can always be used to advertise close to a tire itself, as gray is a neutral color.

The shades rather than the full strength of all colors are easier to handle and are more interesting to the eye.

coach by motors is a part of the government plan to popularize the national parks and make the "See America First" slogan more impelling this year than ever before. While the passing of the stage coach may be regarded in sentiment as a loss, the greater comfort and speed of the motor cars will be recognized as a public improvement.

Extraordinary attention has been given to the design of this equipment, the comfort of the passengers being considered without regard to cost. Mechanically the cars are a development of a type which has proved successful in all of the large national parks and mountainous regions. Special springs, pneumatic tires and deeply upholstered cushions are employed to insure easy riding. Comfort is further enhanced by the folding tops which allow a full view of the scenery and at the same time furnish protection, if needed. In traveling between the hotels in the park, a passenger's hand baggage may be carried on the car in which he rides, on special racks provided for this purpose.

Although the Yellowstone was first opened to private motor traffic late in 1915, thousands of tourists in privately owned cars explored this treasure region last season. Still others entered the park in the White cars which are operated for the traveling public between Cody, Wyo., and the Lake hotel. There are 400 miles of roads in the park, including the Jackson's Hole Country, Jackson's Lake and the Grand Teton mountains, 14,000 feet high. "The Greater Yellowstone," now accessible by the cars of the Yellowstone Transportation Company, comprises 7,000 square miles.

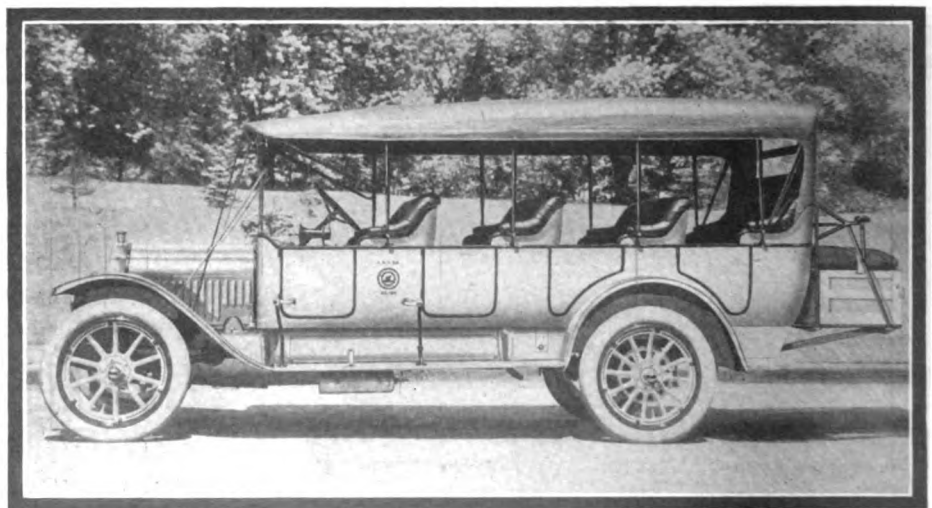
While motor vehicles have been a great factor in making all of the national parks more popular, the present installations are merely a beginning of a more serious attempt to improve in a large way the transportation facilities of our national park system.

## Good-Bye, Yellowstone Park Stage Coach.

The season at Yellowstone Park opens for the 1917 season June 20, and at that time more than 600 old stage coaches, relics of pioneer days and reminiscent of many a western romance, will pass into the discard, to be replaced by a great fleet of luxurious ten and seven passenger touring cars.

Announcement of this fact has been made by the White Company of Cleveland, which is building 150 ten-passenger and twenty-five seven-passenger touring cars for the Yellowstone Park Transportation Company.

The supplanting of the historic stage

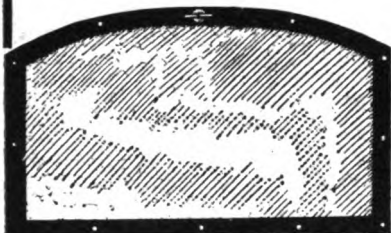




## Announces Change in Firm Name to The Charles H. Buettner Company

One Standard The Best

The manufacturers of UNISCO Specialties have always worked on the theory of quality first—price second—satisfaction always. Thousands of satisfied dealers from coast to coast is the result.



### Ford Curtain Lights

constructed of selected celluloid, bound all around with the best leather gimp. Easily attached and presents a handsome appearance. A rapid sell and profitable specialty. Furnished in either oval or square design.

### Quick Detachable Ford Belts

constructed of heavy double filled duck, 4 ply and stitched in 5 rows—specially treated against heat, oil, water, stretch and shrinkage. Patented hook.



All UNISCO Specialties are known and recognized as goods of merit at reasonable prices.

**The Charles H. Buettner Co.**  
(Formerly The United Specialties Co.)  
CINCINNATI, OHIO



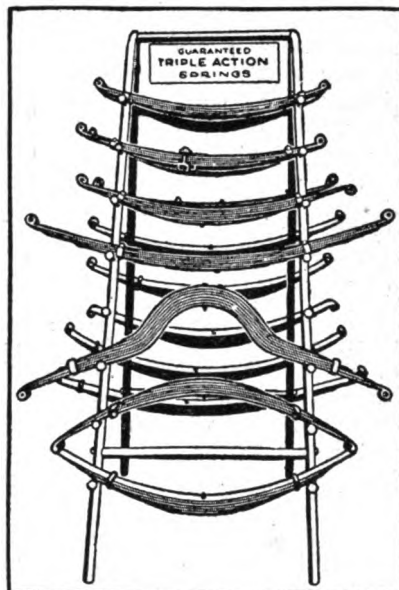
## Clinch the Spring Business in Your Territory and Make Big Money!

Every motorist is looking for real service. He abhors delays of two or three weeks in sending a spring back to the factory for repairs.

We put you in a position to give him quick, daily, even hourly, service. He is pleased. He comes to you for all his repair work and most of his accessory purchases.

This is the experience of over four thousand dealers using our service plan.

By using our assistance you have increased every branch of your business. You open accounts with good people, who have been patrons of other garages not able to handle spring work.



## Announce Yourself As a Triple Action Spring Service Station

Put in a small stock of springs for every-day orders. Not much money needed. We have every kind of spring for every make of car since 1903, regardless of whether the manufacturer is out of business or not.

If you don't happen to have in stock just the type of spring needed, wire us. We ship the same day always, even if the spring you require has to be made specially. We carry over 40,000 springs in stock ready for shipment.

There is more profit in the Triple Action Springs than in any other branch of the automobile accessory business. Because of the large volume of business we do, we can sell you springs at prices that put competitors out of the running, and still you make big profits.

Send for our catalog listing types, dimensions and sizes of springs for every car. We furnish you free of charge a rack for samples like illustration.

Get ready NOW before the season opens.

**Triple Action Spring Co.**

55-57-59-61-63-65-67-69  
E. 28th St., Chicago, Ill.

"The Home of the Johnson Shock Absorber" 4



# Auto Accessories and Garage Equipment

## Service Cabinets for the Garage.

Stevens & Co., 375 Broadway, New York City, are making a line of service cabinets particularly suited to the requirements of garages.

The cabinets are made in units after the manner of sectional bookcases. Some of the garage models have larger units for the base, the entire cabinets then having the appearance of an old fashioned cupboard; the projection formed by the larger unit at the bottom serving as a handy shelf.

The Stevens' cabinets are built to realize the idea in, "What you want when you want it." The lower unit is large enough for the storage of heavy parts, such as cylinders, crank shafts and transmission parts, while the drawers in the upper units are adapted to holding smaller parts and accessories. Particulars with regard to any cabinet can be had by writing Stevens & Co.

## Accurate System of Bookkeeping.

Accurate System and Manifold Co., 22 Beekman street, New York City, is solving one of the garage problems by a simplified method of bookkeeping.

Technically, the method is a self-indexing ledger and statement combined. Practically, it allows instantaneous reference to any account and prevents errors, forgotten charges and slow collections. It saves time, expense and trouble with charge customers. Consequently, it decreases office expense and increases sales.

One entry made from the original order completes the day book and ledger records and writes the weekly or monthly statements, itemized if wished, to make complete explanation to the most exacting customer.



A great advantage of the Accurate System is its simplicity and its adaptability to rush work of the average garage. Full details will be sent on application to the manufacturers.

## Smith Form-a-Tractor.

Smith Motor Truck Corporation, Chicago, announce a new tractor attachment for use with Ford cars.

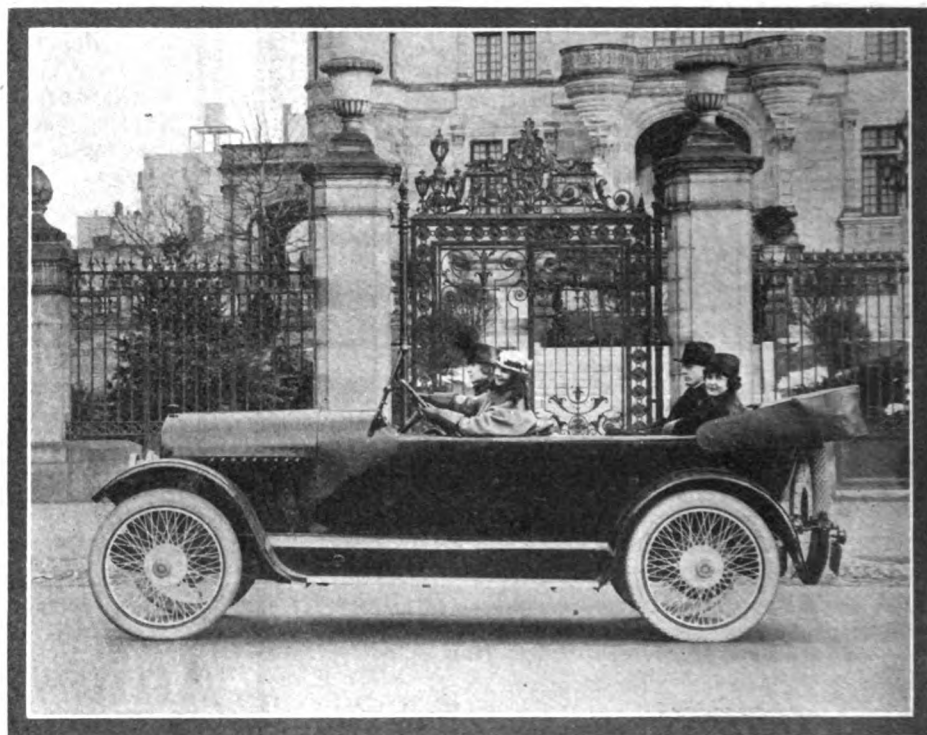
Probably the most remarkable feature of

## The Foursome.

Here is the new Foursome of the King Motor Car Co., Detroit, Mich.

It is distinctly a sport model, with long, low, rakish lines which give it the essential appearance called for by its name. It

has eight cylinders and every detail of manufacture and appearance has been given the closest attention. A lawsuit was necessary to give it the sole right to use the name Foursome. The car retails at \$1,585.



this attachment is its unusual simplicity. It consists merely of a channel section frame which attaches to the Ford front axle, extends under the Ford chassis beyond the Ford rear axle and is connected with a dead tractor axle made of 2 inch cold rolled steel which is designed to receive

Six rollers designed of tough, chrome steel are fitted on this driving pinion.

Exhaustive tests made with the Smith Form-a-Tractor show that it will pull two 14-inch plow bottoms in gangs at a rate of  $2\frac{1}{2}$  miles an hour with the plow set seven inches deep, in virgin sod. This is approximately seventy-five per cent faster than the plowing speed of horses.

Considering also the fact that Smith Form-a-Tractor can be used twenty-four hours a day instead of ten hours a day, which is the average working time of horses, it can easily be seen that a single Smith Form-a-Tractor is over three times as efficient as four horses in its working ability. Unlike the many complicated tractors now being used on the farms, Smith Form-a-Tractor requires no special knowledge for its operation. Anybody who can run a Ford can easily run Smith Form-a-Tractor—even a boy or woman.

## Bethlehem Trucks on Market.

Bethlehem Motors Corp., in its new Scranton plant, will turn out 10,000 trucks of  $1\frac{1}{4}$  and  $2\frac{1}{4}$  ton capacity this year. The production building is 800 feet long. There are 130,000 square feet of floor space in the plant.



## Why Car Owners Demand JOINTLESS PISTON RINGS

There is a lot of difference among the piston rings sold nowadays. They are much alike as far as claims are concerned, but the big difference is noticeable at once when it comes to performance.

The JOINTLESS PISTON RING is different in being unbreakable in performance as well as in print, as motorists are fast finding out.

The JOINTLESS embodies all the good qualities and features that can be put into a piston ring. It also possesses some exclusive features of its own that enable the motorist to get every ounce of energy and speed from the gasoline he uses. It is made and designed by experts and permits no wastage.

Two members of equal size and strength are assembled in such a manner that the strongest part of one backs up the weakest part of the other, assuring uniform distribution of tension.

Even when expanded to fit a worn cylinder or to take up its own wear, it remains UNLEAKABLE—a feature absolutely unique to the JOINTLESS PISTON RING. There are no outside joints to permit leakage, no exposed ends to score the cylinder, no carbon pockets, grooves or other irregularities in its outside surface. No dowel pins or delicate parts to break off—nothing to get out of order.

**List Price Each \$1.00**

DEALERS and GARAGEMEN—Sell the ring that gives universal satisfaction and which every car owner will soon be demanding.

## DETROIT PISTON RING COMPANY

20 E. Jackson Blvd.,  
Chicago, Ill.

55 Richmond St.,  
Detroit, Mich.



## Gives New Life To Your Motor .

Easy as priming.

Harmless to metals and saves gas and oil consumption from 12½ to 25%.

Increases power and speed.

Stops knocks, kicks and back-firing. Keeps your spark plugs clean and gives you a hundred per cent efficient smooth-running car.

## SPECIAL

Enough to clean two or more cars sent prepaid for 85c.

Stock this sure-fire repeater.

Special advertising matter supplied and sales promotion work done for you.

Write for proposition, including big electric window display sign.



## ADAMS & ELTING CO.

716-726 Washington Blvd., Chicago

Toronto  
220 Yonge St.

Brooklyn  
69-71 Washington Ave.



### Twin Fire Spark Plug.

There is a general belief among motorists that the number of sparks a plug gives depends only upon the number of points. In other words, a plug with three points will give three separate sparks, a five-point plug five, and so on. While this belief is natural to the layman it is erroneous because with the connection ordinarily used no plug could fire more than one separate and distinct spark.

The Twin Fire Spark Plug, placed on the market some months ago, is able to fire two distinct sparks because it is a two-series plug. There are two fire points on the plug which operate simultaneously, but the operation of each is entirely independent of the other. This means that if one point becomes clogged with oil or carbon the other continues to fire; and a few hot explosions soon clear the fouled point.

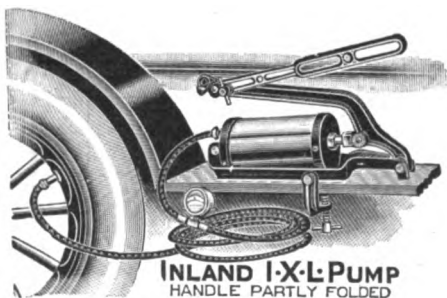
This type of plug consumes no more current than the one-point plug. The two sparks firing at the same instant provide a double intense spark with a resulting increase in power.

The twin fire principle is covered by basic patents held by the Twin Fire Spark Plug Co., of Detroit; and the demand for it among motorists has already absorbed the company's production for several months ahead, and made necessary the immediate construction of larger manufacturing facilities.

It is thought that the twin fire principle furnishes the closest approach that is mechanically possible to the constant efficiency which has so much to do with the smooth running of the motor.

### Inland I. X. L. Pump.

The Inland Pump Mfg. Co., Reaper Block, Chicago, will have its I. X. L. Inland Lever Pump for automobile tires on the market April 1.



This pump develops a leverage of 18 to 1, inflating a tire to any required pressure with almost no exertion. The pump has a patent folding handle and a folding clamp and can be quickly attached to either running board. When folded for the tool box it is  $3\frac{1}{2} \times 1\frac{3}{4}$  in. and weighs eight pounds. The  $3\frac{1}{2} \times 6\frac{1}{4}$  cylinder is a seamless, non-leakable, pressed steel shell. The list price, complete, is \$6. Dealers can get full information by writing to the above address.

## Part of the Record Drive-away of 262 Cars Leaving the Willys-Overland Factory



### Combustion Sight Indicator.

Every phase of motor operation made visible every explosion open to your eye. With every cylinder explosion perfect, think of the perfect adjustment possible when every explosion can be seen.

The Combustion Sight Indicator or Test Plug makes the gasoline motor as simple to adjust as the gasoline stove. You want the same clear blue flame in each—the clean flame of intense and perfect combustion, of maximum force and power.

You've seen the yellow, sooty flame of a dirty gas or gasoline stove, like a smoky lamp. You know that this means half-burned fuel and fouling everything it touches. This same thing is what makes carbon in your motor, burns out your valves, makes your engine miss and blows through gallons of half-burned gasoline.

Grasp what the Combustion Sight Indicator or Test Plug means to you and your engine. With a set of these attached you can correct your carburetor adjustment and tune your motor to absolute perfection, watching every shade of change as it takes place right under your eyes, until you get the maximum burst of clear violet flame in every cylinder.

There's no guessing, no listening for a miss, no wondering about the spark-plugs. A dead plug betrays itself instantly by a dark, dead cylinder. Leaking rings or leaky valves show themselves plainly in the thin, feeble flame. Oil-fouled cylinders soon show their trouble by oil spatters on the glass. It is claimed the money saved in gasoline and spark-plugs in a

few weeks will pay for a whole set of plugs. \$1.50 each.

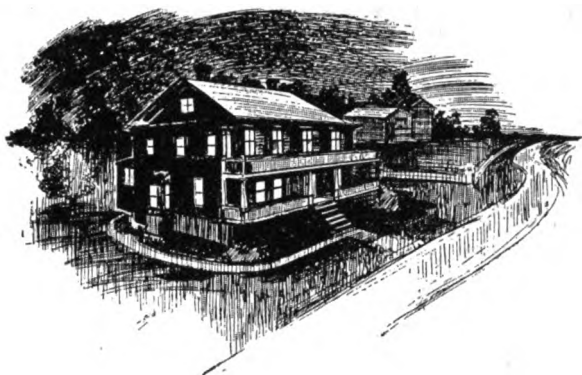
Full particulars and dealers' terms by writing the Detroit Accessories Corp., Detroit, Mich.

### Disbrow Is Racing President.

When a race driver announces what is considered an abnormal speed capacity for the car he pilots, the public generally imagines the car must be specially designed and built. In the case of the Disbrow "Special," which Louis Disbrow has created and will drive during ten weeks of racing next summer, the car is a stock model and the one which Disbrow himself is to pilot is unchanged in any essential from those which are being produced daily in the Disbrow shops. He expects not only to prove that it is the fastest stock car in the world, but with its ability to hit up a clip of ninety-five miles an hour, Disbrow hopes to register the fastest speed he ever made before and during the time he has held the title of king of dirt track race drivers.

### Drove Six Hours with One Hand.

A novel stunt was pulled off recently by C. H. Davis, secretary of the Woods Premier Motor Co., of Denver. With the temperature ranging around zero, with an icy coat on the pavements and through the dense traffic of the city streets, he drove for six hours with one hand, the other tied behind him. Before he was allowed to perform this feat he had driven a police traffic officer for several hours to show there was no danger.

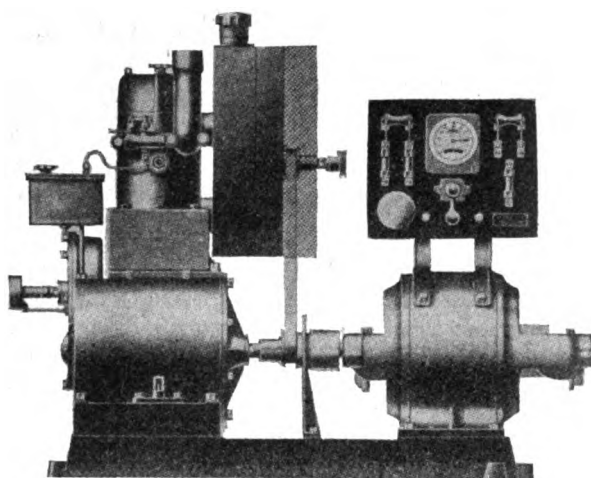


The  
**GENERAL GAS-ELECTRIC CO.**  
 of Hanover, Pa.  
 Announces to the Trade  
**The GENCO-LIGHT Power Plant**  
 and Is in a Position Now to Appoint Dealers

The GENCO-LIGHT Plant produces electricity at four cents a kilowatt hour. It is the Ideal Farm Lighting Plant. Besides it can operate as a self-starting 2 H. P. gasoline or kerosene engine.

Our product is of very high grade. Our dealer's proposition is very attractive. The opportunity of representing a money-maker is yours now. Write for dealer's proposition. Our selling season is all year round.

**General Gas-Electric Co.**  
 Hanover, Pa. U. S. A.



The above cut shows a GENCO-LIGHT Power Plant



**Quick Service** ←

No where in the United States can a garageman or a motorist be more than one-half to three hours away from a stock of

**TUTHILL TITANIC SPRINGS**  
 LUBRICATED

No weakening center bolt--no center nib--but strongest at the center.

**BETTER SPRINGS**

Tuthill Titanic Springs are **guaranteed not to break at the center**—the point where seven out of ten spring breaks occur. They are **guaranteed at all points** and in every respect **for one year**. Our Special Ford Front Spring carries the same broad Titanic guarantee.

**BETTER SERVICE**

In our new stock room is maintained constantly the largest, most complete stock of automobile springs in the world. Springs for every make of car sold in large quantities are ready for rush delivery by express. Even special orders go out within a couple of days.

Sixty distributors, located in all the principal cities of the United States, also carry a large stock.

**Write today** for our valuable booklet on springs, also 1917 price list—most complete price list ever published for spring replacements—and for name of nearest distributor.

**TUTHILL SPRING CO., 760 Polk St., CHICAGO, ILL.**

# Experts on Use of Kerosene

## Noted Engineers Think Kerosene Is Available Whenever Conditions, Price and Changed Methods Force Its Use

Charles Rayfield and Frederick Purdy, engineers of the Rayfield carburetor, believe the use of kerosene as a motor fuel is largely a question of economics and convenience.

When the demand for gasoline was small the proportion taken from the crude oil was also small. As the demand increased, new methods of production have increased the proportion of gasoline at the expense of kerosene, and doubtless still more efficient methods will produce a satisfactory fuel from a still greater proportion of the crude oil.

If the demand should shift to kerosene, the incentive for an improved method of manufacture would be removed, and the kerosene would have to bear a much greater proportion of the income to be derived from the crude oil. Hence the low

cost of kerosene is due solely to its limited use.

Furthermore, the proper burning of kerosene is a function of the motor rather than of the carburetor. To atomize kerosene is no more difficult than to atomize gasoline. The heat required for vaporization would necessarily be greater, and the capacity would therefore be much less. Larger motors would have to be provided for a given power, because of the higher temperature at which the mixture enters the cylinders. Unless water is used with the kerosene, the liability for the collection of carbon on the piston is much greater.

Taken all together, the uses of kerosene on the automobile would not be an unmixed blessing, but the development of motors is going on all the time and it may be possible that some time in the near future kerosene will become a logical fuel, but that does not seem to be the case at present.

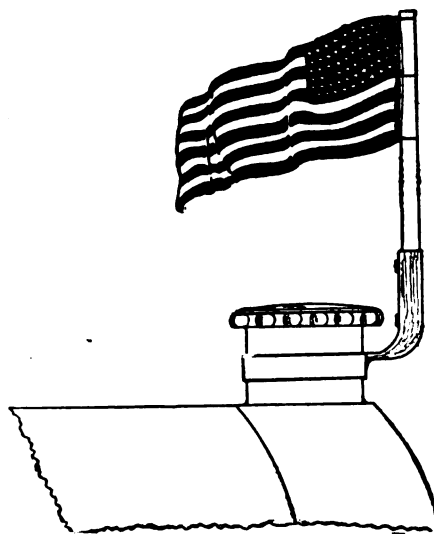
### Tu-Ford Valve Tool.

The Tu-Ford Valve Tool Company of Bay City, Mich., has just commenced manufacturing on a large scale its latest Ford accessory, known as the "Tu-Ford Valve Tool." This useful device serves a double purpose, inasmuch as it first raises the spring, and second, it automatically locks when the spring is in a raised position, making it an extremely simple matter to remove the valve lock at the bottom of the spring, and also to remove the valve and still insure the valve tool holding the spring in raised position. The valve tool also holds the spring in place when removing the valve for grinding. This is of special advantage to the owners of Ford cars and repair men in general. The Tu-Ford valve tool is extremely simple and compact in mechanical construction and is made to be fitted on any model of Ford car. The entire device has been Parker rust-proofed and presents a very neat and inviting appearance. The retail selling price of this latest accessory is \$1.00. The sales supervision for the Tu-Ford valve tool throughout the world has been placed in the hands of Wallace C. Hood Service Bureau, 1199 Woodward avenue, Detroit, Mich. They are busy appointing distributors in unoccupied territory, and would be very glad to hear from responsible dealers who are interested in marketing such an accessory.

### Shattuck Flag Holder.

Shattuck Mfg. Co., 98 Park place, New York City, is marketing a flag and pennant holder which is meeting a ready sale to motorists.

The holder is secured to the filler tube of the radiator by a novel band arrangement which is locked in place by the fingers, and the band is adjustable to all makes of pleasure cars and trucks. One of the features of the design is that the flag holder proper can be set and locked



in any desired position by the fingers, and two or more flags may be used if desired. The design takes flags with staffs up to and including 1/4 inch in diameter and does not interfere with the removal or replacement of the radiator cap. The Shattuck flag holder can be attached in a few seconds, does not injure the finish of the radiator, and comes finished in black enamel. They come in cartons of 25 and the retail price is 25 cents. A liberal discount is offered the trade.

### Internal Gear Drive Is Popular.

No principle of mechanical design in the motor truck industry has popularized itself more rapidly and permanently than has the internal gear drive axle. Previous to 1915, less than six hundred internal gear drive axles had been sold in the United States. In 1915 thirty-two hundred axles were built by the axle manufacturers specializing in this type of final drive. Last year over nineteen thousand internal gear drive axles were built and sold in the United States.

On the most conservative estimate based upon figures which have been furnished by the other two companies making this type of axle, over fifty thousand trucks will be equipped with internal gear drive axles during 1917.

For the first five months of the fiscal year ending March 31 the shipments of the Russel Motor Axle Company were almost double those of the same period last year. The schedule of sales for the seven remaining months of the fiscal year will make total sales for the year more than double the total sales of last year. New business is daily offered and the Russel company is increasing its plant by an additional floor space of 20,000 square feet. New machinery is contracted for and is being received each month to take care of the increasing monthly schedules of production.

## The Markets

**General.**—The general markets are active under increased seasonable and war demands. Spring merchandising is well under way despite the backward weather. The principal untoward conditions inhere in relative scarcity of raw materials and the false cry of economy not related to food and munition conservation. Copper eased off sharply early in the money under government purchases at a record low price for the season, but has reacted partially. Aluminum and lead also declined but not so radically and then firmed up again.

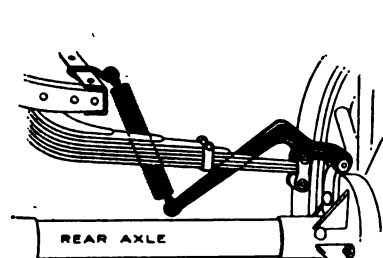
**Scrap Metal.**—This market is always interesting to garagemen and machinists who are able to cash in on their scrap stock as the same accumulates. Current prices paid by wholesale buyers are:

Heavy copper	25 1/4 @ 26c
Heavy copper wire	25 1/4 @ 26c
Light copper	23 1/4 @ 23c
Red brass	22 1/4 @ 24c
Red car boxes	20 1/2 @ 21c
Brass clippings	20 @ 20 1/2 c
Red brass borings	21 @ 22c
Yellow brass turn. and bor'gs.	17 1/2 @ 18c
Heavy brass	17 1/2 @ 18c
Light brass	13 1/2 @ 14c
Medium brass	14 1/2 @ 15c
Auto radiators	12 @ 12 1/2 c
Zinc	7 @ 7 1/2 c
Lead	8 1/2 @ 8 3/4 c
Lead dross	5 @ 5 1/2 c
Tea lead	7 @ 7 1/2 c
Battery plates	5 1/4 @ 5.85c
No. 1 pewter	35 @ 36c
Block tin pipe	47 @ 48c
Tin foil	39 @ 40c
Solder joints	11 @ 11 1/2 c
Old nickel	18 @ 20c
New aluminum clippings	48 @ 49c
Aluminum bor'gs and turn's	21 @ 22c
Cast aluminum	35 @ 36c
Mixed babbitt scrap	9 1/2 @ 10c
Copper shells	7 @ 7 1/2 c

# LOOK AT THESE PRICES

and consider that all **Hanard Products** are *absolutely guaranteed* and sold with the understanding: *Your money back* if not entirely satisfied. *Our confidence in Hanard Quality is unlimited*, and yours *will be* after the first test.

## ABSOLUTELY GUARANTEED FOR ONE YEAR

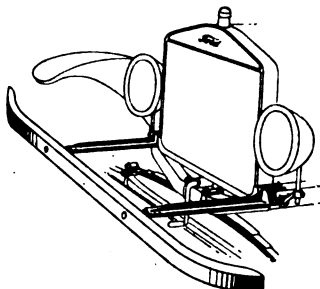


**HANARD SHOCK ABSORBERS**  
Single Arm Type

**\$4.50**

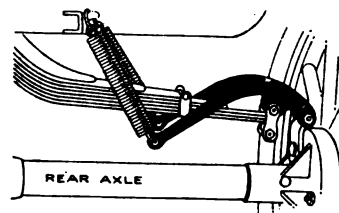
Per set of 4

Oilers and Bronze Bushings  
50 cts. per set extra



**HANARD SPRING BUMPER**  
Clamps on  
2 inch Steel Channel Bar  
Black Enamel . . \$3.50  
Nickel Plated . . \$4.50

*If your dealer cannot supply you with Hanard Products, order direct from us.*



**HANARD SHOCK ABSORBERS**  
Double Arm Type

**\$5.50**

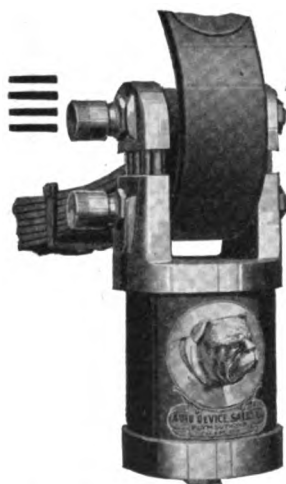
Per set of 4

Oilers and Bronze Bushings  
50 cts. per set extra

## HANARD SALES CO.

86 Michigan St.

Milwaukee, Wis.



## Bull Dog Shock Absorbers

"Eat Up The Bumps"

The eight-rod principle of these shock absorbers overcomes "excessive wearing out"—prolongs the life of the unit and eliminates the side and end swing.

Made for  $\frac{3}{4}$  and semi-elliptic springs. The former size can also be applied to the platform style of spring such as is used on the Cadillac, Packard, etc. The semi-elliptic style is for the Hudson Super-Six, Chalmers, Allen, Moon, Chandler, etc.

### Excellent Dealer Opportunities

Satisfaction guaranteed for one year.

\$15 & \$20 per set—(two).

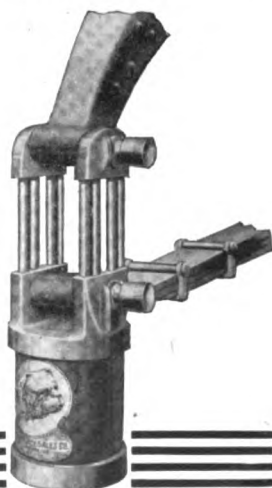
When ordering give name of model, width of rear spring, weight of car, and specify whether touring or roadster.

**Auto Device Sales Co.**  
PLYMOUTH, IND.

Chicago Office

1240 Michigan Ave.

CHICAGO

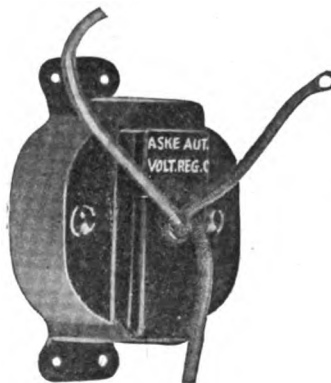


## The ASKE REGULATOR

For the Improvement of the  
**Ford Lighting System**

is the only device of its nature on the market that is patented and guaranteed to continue the operation of ONE light, WITHOUT INCREASED VOLTAGE, should one lamp burn out.

**BRIGHT LIGHTS for Ford Cars at All Speeds**



Laboratory test:  
Running at 7 miles per hour—5 times standard light.  
Running at 10 miles per hour—3 times standard light.  
Running at 15 miles per hour—2 times standard light.  
Running at 20 miles per hour and over—constant light, with no danger of burning out lights through excess voltage.

Diagram for tail light furnished with each Regulator.  
Diagram for spot light furnished with each Dimmer.

**ASKE AUTOMATIC VOLTAGE REG. CO.**  
DULUTH, MINNESOTA

### DEALERS:

You want to handle an article that sells. The Aske Regulator sells and everyone you sell sells another—BECAUSE the "ASKE" possesses merit and assures satisfaction.

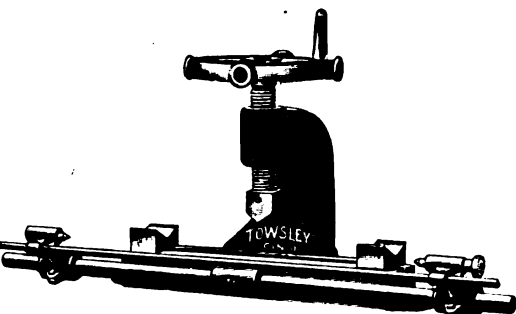
**Regulator ..\$5.00**  
**Dimmer ....\$1.00**

*Write us for particulars.*



### Towsley Straightening Machine.

The Towsley Improved Straightening



Towsley Straightening Machine.

machine is solving one of the major problems of the repairman.

As shown in the illustration, the machine is somewhat simple, but is built to straighten any stock up to  $2\frac{1}{2}$  in. in diameter and forty-eight inches long. The base is a solid casting, trued on the bottom and is 16x28 in. The V-blocks are adjustable on a planed surface and the screw is of  $1\frac{15}{16}$  in. steel, with square thread, five pitched and lathe chased. The net weight is 225 pounds.

Repairmen find the Towsley machine does the work perfectly, without the noise

or jar of the usual pounding and with a saving of more than half the time usually taken.

The A. G. and A. D. was in error in quoting discounts on Pruyn ball bearings, p. 34, April issue. Manufacturers of this class of goods should be written for price list and discount sheet.

Acker Automobile Sales Co. has opened for business at 7512-14 Saginaw avenue, Windsor Park, Chicago. W. H. Brandenburg has taken over the Acker Garage at 71st street and South Shore avenue.

**NO** *More Accurate Than Mind* **LOSS** *More Reliable Than Memory*

**MORE**

Through Bookkeeping

**"ACCURATE" SELF-INDEXING STATEMENT LEDGER**  
Read What One Dealer Has Written Concerning Our System

The Accurate System & Manfolding Co.,  
22 Beekman Street, New York City.

Gentlemen:

Will you kindly prepare 200 more system pads, the same as those supplied with your recently installed system.

At this time I wish to say that we are very much pleased with the excellent system you have provided for the handling of accounts at our garage. It surely is saving many of my men time, and worry, and doing as you have claimed.

I would ask you to hurry along our order for the extra pads. The size will be the same as those used in the last order.

Yours very truly,

**WE DO WHAT WE CLAIM**

1st—Entering orders on pads or in order books.

2nd—The copying of this order in detail into the Daybook.

3rd—The posting of this day-book entry into the ledger.

4th—The copying of these ledger entries to the weekly or monthly statement or bill.

**ACCURATE SYSTEM & MANFOLDING CO., Inc.**  
Makers of Modern Business Systems for Garages.

22 BEEKMAN ST. NEW YORK

**"LIGHTS TWO SIDES"**

Cost to run this sign at 9c per k. w. with 7-40 watt lamps  $2\frac{1}{2}$ c per hour, or 5 hours at night  $12\frac{1}{2}$ c a night.

Will pass Underwriters' Inspection anywhere in U. S.

**"CAN YOU BEAT IT?"**

...MADE BY...

**The Dawes Electric Sign & Mfg. Co.**  
Factories: No. 1 and 2 Arrott Power Building  
Displays Room: 2004 Jenkins Arcade  
PITTSBURGH, PA.

**DEALERS MAKE MONEY!**

Get the Agency for the "Tonford" truck unit,—one of the quickest selling propositions you ever tackled. Attached to a Ford chassis, makes a one-ton truck. Light, strong, economical, easily handled. Drygoods merchants, furniture dealers, retailers in almost every line, bottlers, farmers, creameries, all want it. Find it best possible buy.

**\$325** **\$325**

All the facts that sell the Ford, sell the Tonford. Highest grade truck attachment made—easiest to attach—strongest, most durable. Best constructed truck unit on market—lowest priced. Get busy now, while territory is still open. Write today. Learn how "Tonford" dealers pile up profits.

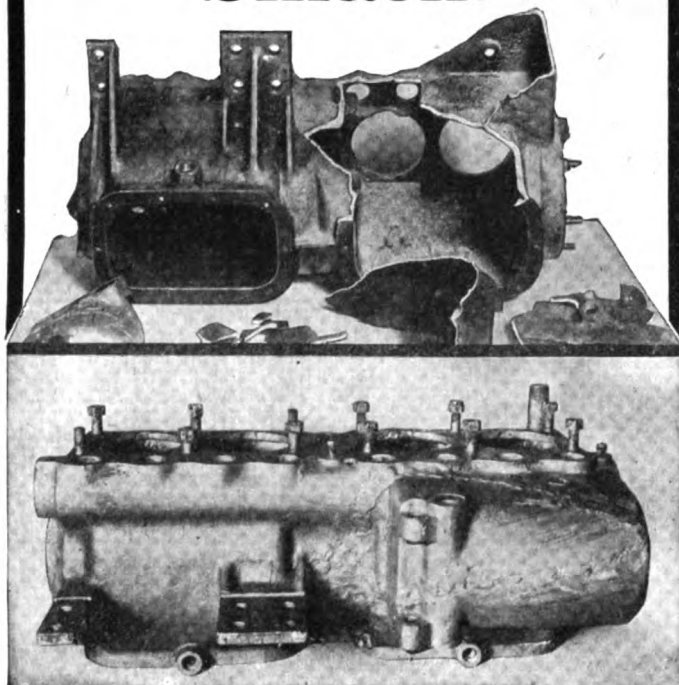
**DETROIT TRUCK CO., Mfrs., Detroit**

**NEWS BULLETIN**

**Disco Moves Into New Factory**

The Disco Electric Starter Corporation of Detroit moved last week into its new factory. The production of the new Disco Two Unit Starting and Lighting Systems will be speeded up by the use of special labor-saving machinery, such as is found usually only in the largest automobile plants.

# Just Look at This Smash!



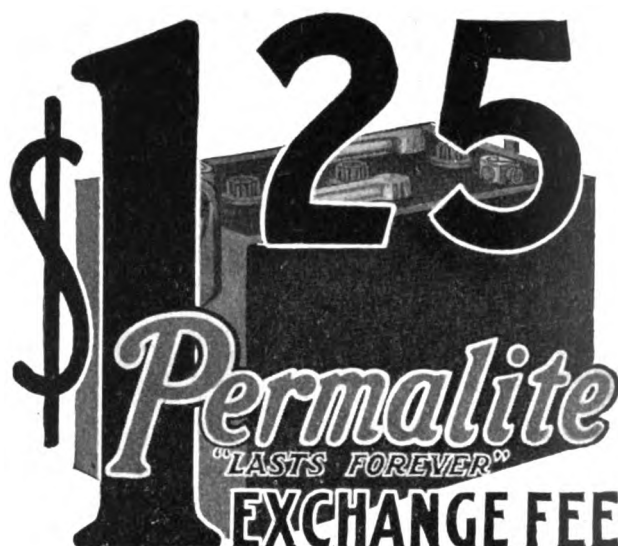
This is an E. M. F. Aluminum Crank Case, broken by a connecting rod coming loose. See how well it was repaired with an Imperial Oxy-Acetylene welding equipment. After preparing and re-heating, it took just 45 minutes to do the welding.

## You Can Do Such Work

You can make a handsome *profit* and at the same time add immeasurably to the *prestige and popularity of your garage*.

A letter to us will bring full particulars concerning oxy-acetylene welding and cutting, and how to do it. Also, information on our LEAD-BURNING OUTFIT suitable for burning storage battery plates and general custom lead burning. Write the letter *now*.

**Imperial Brass Mfg. Co.**  
529 S. Racine Ave. CHICAGO



**Mr. Dealer: You can control  
75% of the battery business  
in your territory**

by establishing a PERMALITE depot. Look at the battery proposition from the viewpoint of the motorist and consider what PERMALITE will mean to YOU.

Permalite Batteries can be leased, only. Exhausted batteries are replaced by fully charged ones at a fixed charge of \$1.25 per exchange. Fifteen minutes is all that is required to make a PERMALITE exchange and the owner of a PERMALITE lease can drive up to any PERMALITE depot in the country and be sure of this standardized service.

No more batteries to buy; no waiting on recharging; no more repair bills; standardized service at a fixed price everywhere—this is what PERMALITE means to the car owner.

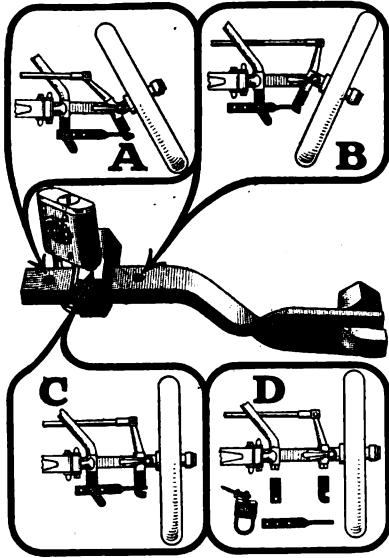
**Write for Details of this Big Idea  
of Battery Service**

*We still have some choice territory open to dealers who can measure up to the PERMALITE standard. Address Department A G-6 for our attractive proposition.*

***Permalite Corporation***

# FORD OWNERS

Are Anxious to Protect Their Investment



A—shows wheels locked to left.  
B—shows wheels locked to right.  
C—shows wheels locked straight ahead.  
D—shows lock parts separate and set in relation to where they are attached to car.

Here is your opportunity to furnish them with a Lock that will make it just as safe as if it was in a safety deposit vault.

The \$5000 A-Y Lock for Ford, Price

**\$3.50**

Write for our full line.

**ANGSTEN-KOCH CO.**

4064 Princeton Ave.

CHICAGO, ILL.

## Jobs Await Skilled Mechanics in Detroit Factories

¶ Come to Detroit—Five Dollar a Day Jobs waiting for skilled mechanics.

¶ We teach you the business in 100 hours—a new and practical system.

¶ Endorsed by all of the leading automobile factories.

Terms to deserving applicants

Get particulars

**Machinist Training School**

140 East Fort St. :: DETROIT, MICH.

## "CURKO" SOCKET WRENCHES

Are turned from the best Solid Bar Stock and are Heat Treated. For

**STRENGTH and RELIABILITY**

They are unexcelled. Ask for dealer's discount.

Price  
**\$1.00**



Graham Roller Bearing Co., Coudersport, Pa.



**TRUNKS FOR AUTOS**

THIS MEANS THE  
**KAMLEE**  
COMPANY  
440 E. Water St. Milwaukee

Trunks for all makes of cars and for all purposes  
Dust-Proof, Rain-Proof, Strong, Light, Convenient, Handsome  
Liberal Profits for Garagemen and Dealers. Send for our proposition

Write for book listing over four hundred styles and sizes of

**LYON SPRINGS**

We guarantee accurate fit and correct sizes. Save time and money by ordering from Lyon. Prompt shipments.

Edward F. Lyon Company 1283 Woodward Ave. DETROIT, MICH.



**TYPEWRITERS**

Underwoods, Oliviers, L.C. Smith, Remington, Smith Premier and other makes  
\$30.00 \$25.00 \$27.00 \$15.50 \$18.50 \$15.00 and up  
Expert repairing and rebuilding. Every machine in perfect condition and guaranteed 5 years. Write for our liberal free trial offer and cut rates prices.  
**ALL-MAKES TYPEWRITER CO.**  
162 North Dearborn Street - CHICAGO, ILL.  
PHONE CENTRAL 6035

SEE THAT YOUR MACHINERY HAS

**SPRING NUT LOCKS**

"The Universal Safety Device"

wherever a nut and bolt are expected to HOLD

"TELL THE MAN THAT MAKES YOUR CAR"

Ask your dealer.

## AUTO TOPS FOR ALL CARS



FORD ONE MAN TOPS  
Seat Covers for All Cars  
Top Coverings for Any Car  
Tops Made to Fit Any Car

**WE CAN SAVE YOU MONEY**

**BUOB & SCHEU**

201 Webster St., Cincinnati, Ohio

ONE MAN TOPS  
FORD TOPS  
TRUCK TOPS  
SEAT COVERS  
DUST HOODS  
KICKER PADS  
TOP COVERINGS  
AUTO CURTAINS  
CUSHIONS  
AUTO TIRES  
AUTO TUBES  
RADIATOR COVERS  
HOOD COVERS  
DRIVER CUSHIONS  
FORD WHEELS  
FORD FEND

## Add \$250<sup>00</sup> A MONTH EXTRA To Your Business

### REPAIR AUTOMOBILE TIRES

Sounds like a whole lot of money to clear extra every month. Seems almost impossible, but that is what hundreds of men are doing who have added a Tire Repair Department to their business. The investment is small, the profit large and returns quick and all cash, besides the demand for tire repairing and retreading is constantly growing. Your garage is by no means complete, your business is not as profitable as it can be until you get in on the Tire Repairing and Vulcanizing end.

### THE HAYWOOD TIRE REPAIR EQUIPMENT

Answers all the requirements to successfully handle this end of the business. With it and a little business judgment, success is certain. Every year adds thousands of new auto owners. They are looking more and more to economical tire service. The day of discarded tires is over, the Haywood Equipment makes this possible.

### HERE IS YOUR OPPORTUNITY



Either as a side line to your present automobile business or as a business by itself, the Haywood Equipment will make money for you. Tires go wrong all the time. You know that. Keep them in tune. Give your customers complete service—repair their tires and all. This builds business and makes you rich. Experience unnecessary. You can learn easy—or teach a boy to handle this end. Be the boss and make the money. Learn the details now. Investigate. Act quick. Be the first. Send name and address only. A postal will do.

**HAYWOOD TIRE & EQUIPMENT CO.**  
650 Capitol Ave., Indianapolis, Ind.

## Break Into a BIG Business

### TOLIVER PUNCTURE-PROOF TUBES

sell easily—our agents make \$5.00 to \$50.00 a day net profit. No competition whatever—ours are the only positively puncture-proof Inner Tubes on the market. Because they are guaranteed for 5,000 Miles of service without losing air through a puncture, any motorist will consent to try them once, and straightway he becomes a constant user of Toliver Puncture-Proof Tubes. We are now introducing also the Toliver Plain Tube which is not puncture-proof—but is the highest grade inner tube that U. S. gold can buy. If you wish to establish a Business of Your Own with unlimited possibilities for profit, here is the opportunity.

Small capital is required. If you are a salesman—a real salesman—\$75.00 to \$100.00 will start you.

Write us for complete details

**TOLIVER TUBE AND TIRE CO.**  
2061 Tramway Bldg., DENVER, COLO.

## Fast Sales Big Profits

## TWIN FIRE

### THE ONLY SPARK PLUG OF ITS KIND

Genuine satisfaction—for both user and dealer—is swelling the sales of Twin Fire Spark Plugs. It really does what the motorist has always wanted—it laughs at soot and oil. The laws of electricity make it physically impossible for any other than the Twin Fire plug to fire two separate and distinct sparks at the same instant. There are two firing points on the Twin Fire, each firing independently of the other. If one point clogs the other continues to fire and cleans the fouled point. Most of the country's liveliest dealers are pushing Twin Fire. Write or wire today for dealers' plan.



**TWIN FIRE  
SPARK PLUG CO.**  
658 Woodward Ave.,  
Detroit, Michigan

The first efficiency  
plug. Retail for  
only \$1.00.



The ordinary  
plug is dead  
when even one  
point is clogged.



Twin Fire always  
fires—one point  
cleans the other.

## You Can Make Shims

in several ways; most of them expensive, inaccurate and unsatisfactory. The ONLY RIGHT WAY is to use

**LAMINUM**  
The MATERIAL for SHIMS

the way of all the clever engineers. Laminum is composed of innumerable layers or laminations of thin, smooth brass, all held firmly together by a metallic binder.

The making of adjustments demands less time with Laminum than is required with loose-leaf shims, at the same time offering greater accuracy. Laminum is indispensable wherever there is a split bearing, and is especially adaptable to automobile motors of all makes.

The metal is manufactured in sheets 6 inches wide and 36 inches long, but the manufacturer is prepared to stamp it to any special shape desired. To obtain the proper thickness it is merely necessary to turn up a leaf of the metal at one corner of the shim with a sharp knife and then tear it off, just as sheet is



**Laminum**  
The Only Right Way

Use Laminum and you will turn out better jobs at less cost. For repair work Laminum is put up in convenient assortments. Details on request.

**LAMINATED SHIM COMPANY, Inc.**  
531-541 Canal Street New York, U. S. A.



## Have You This Money-Making Tool in Your Garage?

The Universal Cylinder Reboring Machine has an adjustment of from  $2\frac{1}{2}$ " to  $5\frac{1}{16}$ ", enabling you to rebores the cylinders of any car on the market.

So simple and positive in its action that one entirely unfamiliar with the work can rebores cylinders with precision and rapidity.

Do not confuse the "Universal" with the ordinary type of cylinder reboring devices, as it is designed and constructed upon the finest principles—automatic in its operation—accurate in its performance.

Highly endorsed by the leading automobile manufacturers of the United States. Reasonably priced and positively guaranteed.

*Write us for particulars*

**The UNIVERSAL TOOL COMPANY**

**916 Beaubien Street, Detroit, Mich.**



## There's a liberal profit for you in this "All Year" accessory

As the price of gasoline goes up, the demand for the WILLARD SUPER-HEATER increases. It gives seven more miles to the gallon of gas on a Ford car so the high price of gasoline makes it a real necessity to the Ford owner.

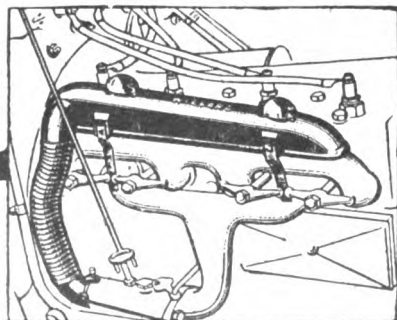
Through the introduction of super-heated air into the standard Ford Carburetor, by the WILLARD SUPER-HEATER, the gasoline is completely vaporized, securing the full efficiency from the gas requiring less amount per charge; consequently more mileage per gallon.

Intensely practical—can be attached in ten minutes. Outlast an automobile.

**Retails for \$5.00**

Write today for liberal dealer offer.

**WILLARD COMPANY, South Bend, Ind.**



## Hansen Automatic Air Valves



Model C. Price, \$2.50

The Hansen Automatic Air Valve is designed for use in Garages, Tire Service Stations, and Gasoline Filling Stations and all places where air is supplied for tires.

It will give more service with less trouble than any valve you may have ever used.

Instantaneous in action.

Does not leak.

Rubber washers do not come in contact with valve stem.

Guaranteed to give satisfaction.

Adopted by the largest chain of tire service stations in the country.

Sold by all the leading jobbers.

Distributed by

**Gray-Heath Company,**

1440 Michigan Ave.

Chicago, Ill.



Model D.  
Price, \$2.50

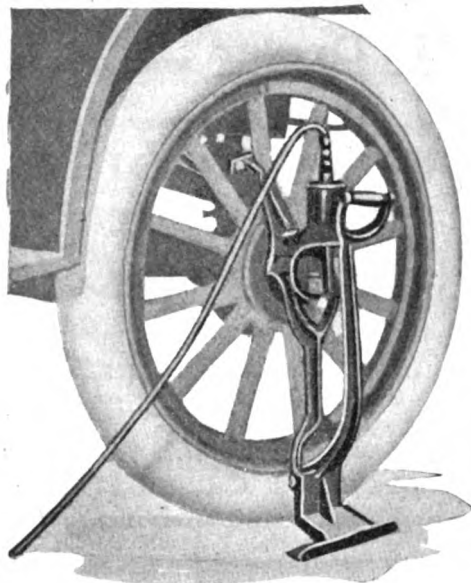


Model E.  
Price, \$3.00

# FORD customers!

*will want the*

## DONALD POWER TIRE PUMP



By letting the engine run on its slowest speed on high gear the rear wheel, which is jacked up, furnishes the power to drive the pump, which will inflate either of the other three tires, in from one minute to one minute and thirty seconds.

The DONALD Pump is designed to give the Ford owner a high class, efficient pump at a moderate price.

Live dealers should write for sales particulars.

### DANVERS SPECIALTY COMPANY

DANVERS, ILL.



## Ganschow Gears

are the standard of quality for the automobile industry. Our quick service has also made the names "GANSCHOW" and "GEARS" synonymous to car owners, garagemen and repairers.

We are prepared to furnish promptly transmission, differential and timing gears, and any other parts made from either open hearth, nickel, chrome vanadium or any other alloy steel, for any car of either American or Foreign manufacture. Workmanship and quality guaranteed.

### William Ganschow Company

1002 W. Washington Blvd., Chicago, Ill.



BEWARE OF IMITATIONS

The right-angle interlock is your safeguard



## PISTON RINGS

This perfect three-piece construction justifies the name—EVER-TIGHT. Note how accurately the right angles fit together. Engineers and Engine Builders acknowledge that this is the only proper construction for safety and prevention of leakage.

### Get Your Share of EVER-TIGHT Profits

Make money for yourself and save money for your customers by installing Ever-Tight Piston Rings in their cars. That puts you "in solid" with your trade and gives your bank account a boost at the same time.

Ever-Tight Piston Rings absolutely prevent leakage. They are guaranteed to give compression in out-of-round cylinders as well as in true ones. They produce more power—thus reducing maintenance cost.

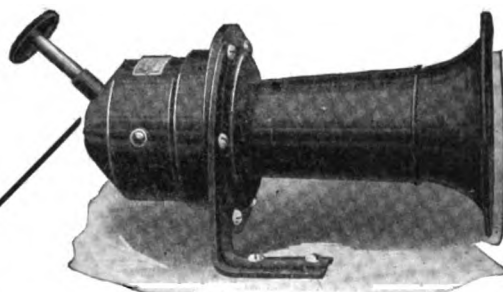
Ever-Tight Piston Rings consist of three separate parts grooved together into one ring by its own right angle interlock. They fit tight, without binding. They are flexible, and friction is reduced to the minimum. The Ever-Tight is the only perfect three-piece piston ring on the market. It is the leader.

It's up to you to investigate Ever-Tight Piston Rings for your own sake as well as your customers'. If dealers do not carry Ever-Tight Piston Rings, write us direct.

### Ever-Tight Piston Ring Co.

1431 Chestnut St.

St. Louis, Mo.



## The Garford Hand Horn — \$3.50

Couldn't be better if  
we charged \$100.00

It is at once the simplest and most dependable of all Warning Signals.

Note the rakish slant of the plunger, set at an angle of 45 degrees. This makes it convenient to operate.

A touch of the finger on this plunger gives you all the warning that you want instantly. The note may be modulated at will from a loud, far-flung call to a short, snappy signal to clear the road.

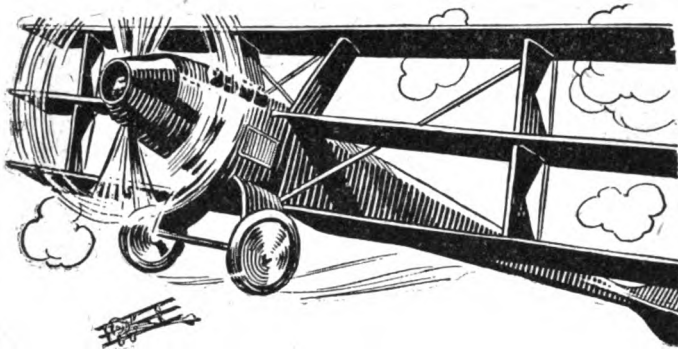
Remember there are no batteries, nothing complicated in construction and nothing to get out of order.

*We have a splendid proposition for dealers.*

*Write for terms.*

### The Garford Manufacturing Co.

ELYRIA, OHIO



## INLANDS FOR ARMY AEROPLANES

—the supreme recognition of INLAND qualities! For aeroplanes!  
—the utmost of all engine service, where dependable, maximum power is imperative—INLANDS are chosen.

Standard equipment for Stutz, Franklin, Hal 12, Apperson, Pathfinder, Weldely motors, etc. Already in 100,000 engines. Steadily and surely the whole motor world is adopting INLANDS.

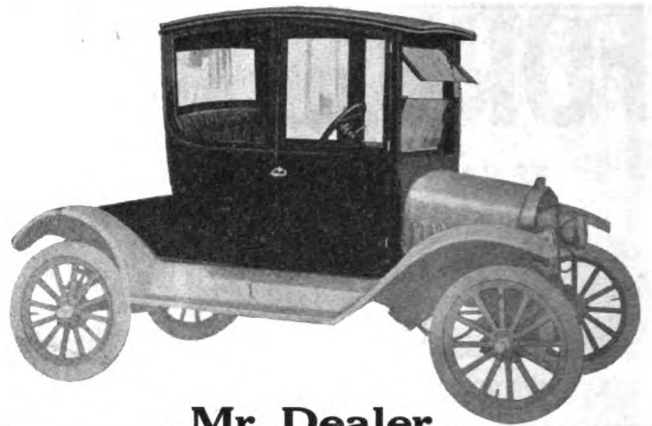
Absolutely gas-tight—no gap and the spiral cut causes it to make perfect contact with the entire cylinder wall. Strongest and most durable because one-width and thickness all around. Low priced because one-piece.

90 days trial—money back guarantee. Write for our deal to dealers.

Inland Machine Works, 817 Mound St.,  
St. Louis, Mo., U. S. A.

# INLAND

## 1 PIECE PISTON RING



**Mr. Dealer**

## There is Big Money for you in FORD BODIES

The Millspaugh and Irish line of Ford Coupes and Sedans is distinctive and different. They really transform Fords into handsome, graceful cars and enable owners to use them the year around. The very sight of one of our Sedans or Coupes makes the Ford owner desire it. An all-year-'round seller.

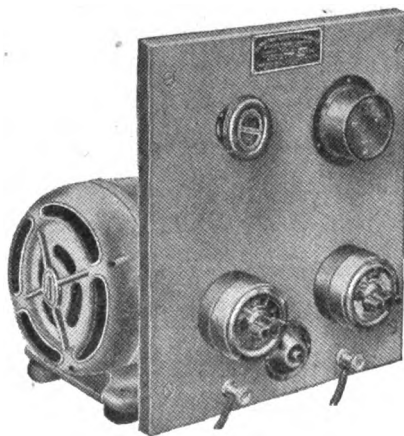
The prices are moderate and the margin of profit to you is large.

Our Ford bodies are all of standardized dimensions and can be fitted to any Ford Chassis in a short time.

Write today for dealer's proposition

**Millspaugh & Irish**  
212 W. McCarthy St., Indianapolis, Ind.

A Big  
Thing  
for the  
Garage  
and  
Repair  
Shop



## ELLINGTON

### Small Battery Charger

simplifies and facilitates battery charging and puts it on a more profitable basis.

Is a compact little outfit and in operating on 110 or 220 volt 60 cycle is a 50 volt motor generator capable of charging from 1 to 5 sets of 6 volt batteries or up to 10 sets in series parallel. Requires no attention when charging, can't burn out regardless of how handled, will withstand overload and so low in price that every Garage and Repair Shop should use one to supply the needs of the motoring public.

We have all the information you require. Write.

**ELLINGTON ELECTRIC CO.**  
Quincy, Illinois



## The Successful Garage Manager

is the one who lets the people know he is seeking their trade—that he is in business to serve them. The same is true in any business. Wherever you see a

## Federal Electric Sign

installed, you will not see any one loafing.

You should realize that many autoists who need garage facilities would stop at your place if there was an electric sign to tell them where you are.

Let us help you plan a Federal Electric Sign for your garage. Address Dept. S.

**Commonwealth Edison Company**

Edison Building

72 West Adams Street, Chicago

If located outside Chicago address: Federal Sign System (Electric),  
Lake and Desplaines Streets, Chicago



**Shotwell**  
NEVER MORE NEVER LESS  
STANDARD OF ACCURACY

**Method of handling hazardous liquids**

**K** NOW that there is absolutely no waste; be sure of the accuracy and economy of your filling system; see that it's Shotwell.

You will find in this new system distinct advantages over all other methods. Does away entirely with the old rack and pinion. Accuracy of measurement absolutely assured. Large contact surfaces completely enclosed and protected from dust. Volume can neither be increased nor decreased through negligence or design.

**Storage systems and pumps for public garages, private garages, stores, factories, railroads, etc.; all embodying the features that make the Shotwell the standard of accuracy; never more, never less.**

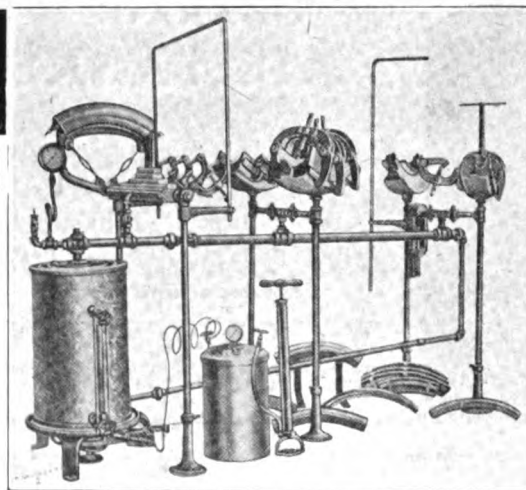
**Shotwell Pump & Tank Company**  
31 N. Alabama St.  
Indianapolis, Indiana

**The Scout**

**ACCESSIBLE FOOT VALVE**

Located directly ABOVE the tank; not inside. Easy to get at through cast iron man-hole box which is part of equipment. Makes it easy to clean valves and intake screen; does away with old troublesome and expensive method. An EXCLUSIVE Shotwell feature.

**Write for Catalogue**



## BADGER Vulcanizers

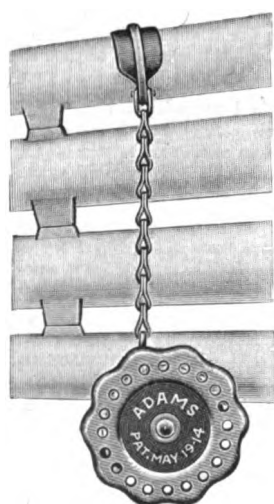
*because of their many exclusive features are the best choice—*

The bulk of your profit is generally spent in buying air bags. Our solid flexible pad eliminates this. Our attached sliding hinge clamp is another attractive feature of BADGER Vulcanizers. 8 complete models. Write for illustrated catalogue.

**TIRE REPAIR EQUIPMENT COMPANY**  
740 Johnson Street Appleton, Wis.

## Adams Auto Top Holder

**"STOPS THE RATTLE—SAVES YOUR TOP"**  
**NEATEST—QUICKEST—STRONGEST**



Dealers everywhere will find a ready sale for this best of all Top Holders. **An ornament to any car.** No unsightly projecting arms, nor dangling straps. Can be installed in two minutes, and operates quicker than any other.

Two sizes —  $\frac{5}{8}$ " holes for small cars.  $\frac{3}{4}$ " for large ones.

**Price \$2.00 per pair**

**Write for Discounts to Dealers**

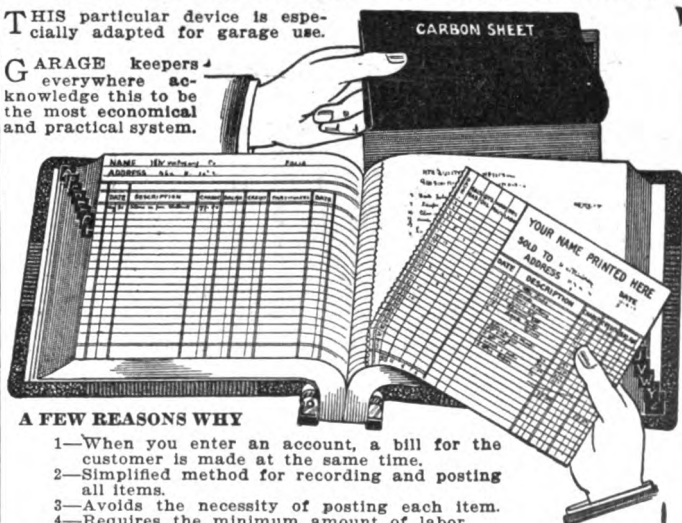
**ROCK ISLAND MFG. CO.**  
Department C ROCK ISLAND, ILL.

## SAVE TIME AND MONEY

**Our SPECIAL GARAGE Bookkeeping Plan Gives You the HIGHEST Possible EFFICIENCY**

THIS particular device is especially adapted for garage use.

**G**ARAGE keepers everywhere acknowledge this to be the most economical and practical system.



### A FEW REASONS WHY

- 1—When you enter an account, a bill for the customer is made at the same time.
- 2—Simplified method for recording and posting all items.
- 3—Avoids the necessity of posting each item.
- 4—Requires the minimum amount of labor.

**This page is the customer's bill; the one underneath is your copy.**

**Harton's Garage and Accounting Record is another new labor saving device we make. Ask about it.**  
**SEND FOR DESCRIPTIVE FOLDER AND FULL PARTICULARS**  
**THOMAS J. HARTON & CO., Inc.,** 212x Church St. NEW YORK  
*Loose Leaf Specialties*





## GARAGE AIR TANKS

Scaife Copper-Brazed Tanks will hold air indefinitely without loss of pressure.

Copper-Brazed Tanks are made only by our company.

*Beware of Imitations!*

**Wm. B. Scaife & Sons Co.**

26 Cortlandt St.  
NEW YORK, N. Y.

First National Bank Bldg.  
PITTSBURGH, PA.

## GASOLINE STORAGE OUTFITS

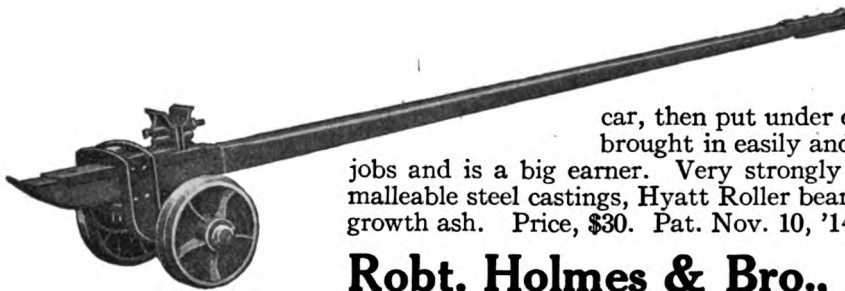
If you wish catalogue and prices of the cheapest, safe and thoroughly reliable gasoline storage system on the market, write us.

**Wm. B. Scaife & Sons Co.**

New York Office:  
26 Cortlandt St.

First National Bank Bldg.  
Pittsburgh, Pa.

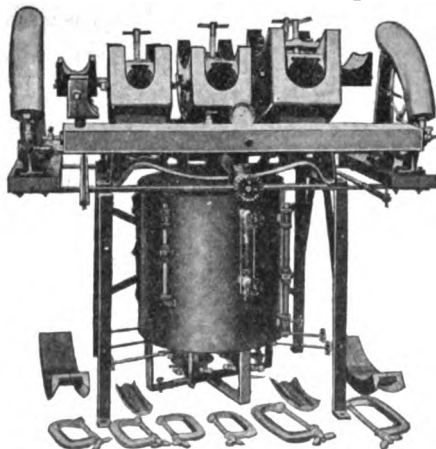
## Hundreds of Garagemen Use the Holmes Wrecking Truck



It is just what they need for bringing in wrecked cars. The truck is used as lever to raise the car, then put under either axle and any size car can be brought in easily and quickly. Brings lots of profitable jobs and is a big earner. Very strongly made, having frame and wheels of malleable steel castings, Hyatt Roller bearings for wheels, and tongue of second growth ash. Price, \$30. Pat. Nov. 10, '14. Discounts to dealers and garages.

**Robt. Holmes & Bro., - Danville, Ill.**

## Vulcanizing With a Vanderpool Vulcanizer Brings Big Profits



3 Cavity Combination Vanderpool Vulcanizer

Here is an exceptional opportunity for Garages as well as Vulcanizing Companies to secure a vulcanizer that will turn out high-grade work at a small cost. The fuel saved alone, will pay for the machine in a short time—then you will "cash in" on your investment. This plant, the Vanderpool Vulcanizer, is meeting with enthusiastic approval of hundreds of satisfied users all over the country. Unsolicited testimonials from the various companies now using the "Vanderpool" testify to the dependability, efficiency and economy of this "Vulcanizing Wonder." One man writes that the "first month's profits paid for the plant." No experience needed—we teach you. It occupies very little floor space, and "once bought, you will never have to buy again."

Send in this ad with your name and we will mail catalogue and prices

**VANDERPOOL COMPANY**  
Box 33 SPRINGFIELD, OHIO

## Pondelick Brothers

will pay **\$100**

if they fail to duplicate any part of any make of automobile or truck foreign or domestic, submitted to them. That sum will be paid to the person sending the order.

Parts of any machine can be duplicated in 1 to 3 days' notice. All welding is done at their risk. Do not compare this work or welding with that of others. If you have a broken part or parts that others cannot weld or repair, send them to Pondelick's. They increase the durability of many parts—even where the manufacturers fail.



Supply your customers with "Pondelick's" anti-leak piston rings, and you insure them against engine trouble.


They have the largest and best equipped plants in the United States for the repair or reproduction of automobile parts.

Cylinder regrinding, new piston, special casting, heat treated, Pondelick's self-adjusting, anti-leak piston rings, new wrist pin, hardened and ground, bushing made of genuine bronze, including fitting and assembling of connecting rod to piston for \$15.00.

Reputation, not competition, determines our policies. Visit our plants and be convinced. Ask anywhere or anybody about our work.

General Factory, 5100 to 5112 West 16th St.  
Main Office, Leavitt St. and Jackson Blvd.

**Pondelick Brothers,** CHICAGO ILLINOIS




**ADVERTISING SPARK PLUG TESTER AND GASOLINE GAUGE**

**YOUR NAME ON BACK OF GAUGE**

For advertising that will pay you, give your motoring customers a useful and inexpensive device. The "INSTANTO" Spark Plug Tester and Gasoline Gauge with your name and address printed on the back makes an excellent advertising novelty and costs you very little.

**THE M. A. LEVY COMPANY**  
429 So. Dearborn St. Chicago, Ill.

**"INSTANTO" SPARK PLUG TESTER**  
APPLY TIPS TO TERMINAL CAP AND BASE OF PLUG.  
PATENTED - THE M. A. LEVY CO.




**PROGRESSIVE GARAGE**

Keeping your name before your customers in a most effective and the least expensive way is your problem. The "INSTANTO" is the answer. Sample 10 cents to cover postage.

**WRITE TODAY FOR PRICES**

Durable  
Accurate  
Reliable  
—  
Prices  
Reasonable



**Be "Time Wise" and positively know the cost of every Automobile repair job and check your workmen's time**

By the use of the **Automatic Time Stamp**, a thoroughly practical and comparatively inexpensive mechanical Time Cost Keeping System may be installed which will give a correct, indisputable and automatic printed record of the exact time consumed or occupied in doing any job or piece of work.

A great many service stations use one or more of these machines and no automobile man can afford to carry on business without at least one **Automatic Time Stamp**.

We guarantee that its use will save time, money and annoyance, eliminate losses and increase profits.

**Descriptive Printed Matter and Sample Time Cost tickets free on application.**

**THE AUTOMATIC TIME STAMP CO.**  
Automobile Dept., 161 Congress Street, Boston, Mass. Established 1880  
*Originators of the Art of Printing Time Automatically*

Also, Makers of the Automatic Time Register, the Duragraph (Elapsed Time Recorder), and Time Recording and Computing Machines for all divisions of time and for all purposes.

**GREATER PROFITS**  
**From Your Repair Department**

and absolute satisfaction to your customer if you base your charges on actual time consumed and can submit records as evidence—no embarrassing errors or disputes.



Price \$8.00

Guaranteed

Your repair department automatically increases its efficiency and your profits by using the

**New Improved Cosmo Time Stamp**

It records accurately date, hour and minute each job is started and finished—speeds up the entire shop—permits no "loafing on the job."

**Special—10 Days' Trial Coupon—Mail today**

**A. D. JOSLIN MFG. CO., 225 W. Erie St., Chicago.**  
Please send me Cosmo Time Stamp on 10 days' trial. At end of 10 days I will remit the price, \$8.00 or return the Time Stamp.

Name .....

Address .....

Don't Let Your Workmen Waste their Time Trying to Figure Out What the Job Should Cost

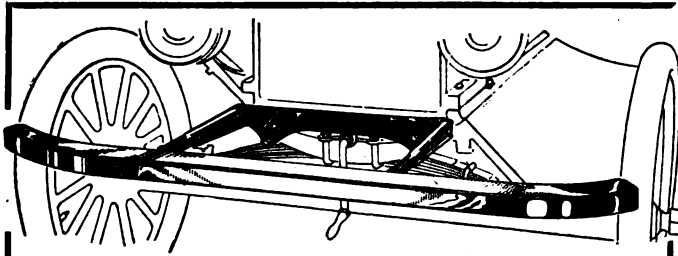
**USE THE**

**CALCULAGRAPH**

Too much time is ordinarily wasted in the garage trying to get a proper estimate of what the customer should be charged. If you adopt a **CALCULAGRAPH** it will accurately record your elapsed time—will give you a square deal, likewise your customer. With a **CALCULAGRAPH** you are always getting "full value" for your time.

**CALCULAGRAPH CO.**  
30 Church St., Dept. 77  
NEW YORK N. Y.





## AMERICAN FORD BUMPER

Can't be beat for rigidity, simplicity and ease of attachment. Will stay put.

**AMERICAN BRASS FOUNDRY CO.**  
Milwaukee, Wis.

## KEEP YOUR BOLTS WHERE YOU CAN FIND THEM

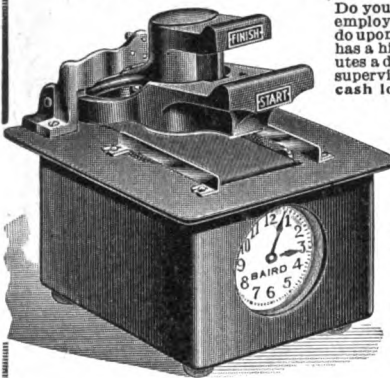


KEEP YOUR REPAIR PARTS, SUCHAS BOLTS, SCREWS, COTTER PINS, BALL BEARINGS, ETC., WHERE YOU CAN FIND THEM INSTANTLY, AND WHERE THEY WILL BE PROTECTED FROM DUST, RUST, ETC., IN A REVOLVING CASE MADE IN MANY SIZES, OF HIGH GRADE MATERIAL.

Write for a Catalog

**AMERICAN BOLT AND SCREW CASE COMPANY**  
DAYTON, OHIO.

## TIME \$\$\$\$\$\$



Do you keep as careful a check on how your employees spend their valuable time as you do upon your cash? WHY NOT? Their time has a high cash value to you. A few minutes a day lost through lack of automatic supervision soon adds up into a heavy cash loss.

### **BAIRD** Moderately-Priced **Time Recorders**

are as important in time checking as the cash register is in cash checking. They relieve high-salaried foremen of much unnecessary supervision—they keep your workers up to top-notch production—they weed out the "drones." Time Recorders, Stamps, Clocks, etc., for every timing purpose. Moderately priced. Write us today. *Interesting Booklets Free!*

**BAIRD EQUIPMENT CO.**  
324 W. Ohio St., Chicago  
Phone Superior 2-71

## PRESTO-LOC SELF VULCANIZING PATCH

For repairing punctures and blow-outs.

Easily and quickly applied anywhere without heat and guaranteed to stick permanently.

Enough PRESTO-LOC to mend 100 punctures sent prepaid for \$1.00.

*Distributors Wanted*

**Auto Supply & Mfg. Co.**  
210 Fourth Ave. Pittsburgh, Pa.



## RADIATOR CURE STOPS LEAKS

Acts instantly and permanently. Highly endorsed by garagemen, repairmen and users. Try it at our expense.

Write for agency particulars and sample package.

**THE M. W. DUNTON COMPANY, Providence, R. I., U. S. A.**

## GEARLESS DETROIT MOTOR DRIVEN TIRE PUMP

*Instantly attached without tools or adjustments.*

Now ready for Briscoe, Dodge, Chandler, Hudson, Overland, Reo, Stearns, Saxon 1916 and Studebaker. On and off in a jiffy. Not a rubber diaphragm device. Write for details.

**DEALERS: ASK FOR DISCOUNTS. PRICE \$10**

**DETROIT ACCESSORIES CORP'N**

509 HILLGER AVENUE :: DETROIT

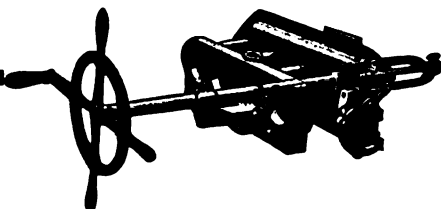
## "Hercules" Guarantee Welding and Brazing

Of all metals—aluminum a specialty. Superior machinists. Fine Piston castings.

### CYLINDERS REBORED

New Pistons and Rings furnished. We sell Piston Castings. We manufacture Acetylene Welding and Cutting Apparatus and Carbon-Removing Apparatus. Send on your work—our prices are right—or write.

**"Hercules" Welding & Machine Co.**  
223-225A N. 16th Street Philadelphia, Pa.  
Members A. A. G. O.



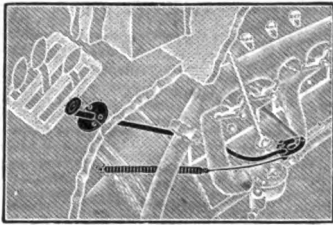
### The Heiser Improved Cylinder Reboring Tool will put "PEP" into your work

New improvements make it far more efficient. The time of operation has been reduced one-half; and is the only reboring tool that is self-sharpening. The only tool (except expensive grinders) that will not leave the finished cylinder slightly tapered toward the bottom. The only tool which rebores between centers—this insures finished cylinders square with the crank shaft, round, straight, and true.

The Heiser Improved Cylinder Reboring Tool makes good shops out of poor ones and better ones out of good ones. Descriptive literature on request.

**HEISER SPECIAL TOOL CO.**  
333 Rogers Bldg., Kingston, Missouri

## The Ford Gets Under Full Speed Almost Instantly When Equipped With An EWALD FOOT ACCELERATOR



No wonder that Ford Owners everywhere are demanding this device which does away with vexatious delays when starting and leaves the driver's hands free to operate the steering wheel, horn or brakes. It increases the mileage per gallon by not racing the engine and increases the flexibility of the engine 25 to 50%. It soon pays for itself on any Ford Car.

A sure winner for dealers.  
Get your share of the profits.  
Write today for dealer proposition.

**Ewald Novelty Works**  
Oakfield, Wis.



Thousands of FORD MOTORISTS will want  
**W & C.**  
DOUBLE-ARM SHOCK ABSORBERS  
for "more" comfortable riding this season

The effectiveness of the W. & C. in giving comfort and smooth riding qualities to Ford cars is now a matter of general knowledge. The demand for it is increasing and this summer it will be tremendous.

Write today for dealer proposition.

**P. H. WEBBER CO.**  
HOOPESTON, ILL.

**No wasted "Free Air"**

**SNAP!** when the inflating valve is removed the AIR PRESSURE STOPS

All garages and repair shops distributing free air can profitably use the

## SCHRADER UNIVERSAL INFLATING VALVE

If you have a SCHRADER valve you know that your "bottled air" is safely tucked away the minute it is taken off the tire valve. The



air is released by pressing the nozzle of the inflating valve against the tire valve, and stopped by removing the device from the tire valve. Fits any diameter of hose from 1/4 to 5/8 inch.

Price \$1.00

**A. SCHRADER'S SON, Inc.**  
783-793 Atlantic Ave. Brooklyn, N. Y.

**Demountable at \$1.00 A Wheel**

Use Wooden Wheels Now on the Car and These New Bolts



**Draw Trade Your Way**

Be first in your locality to get this proposition—just what the small car owner is looking for. It means fear of punctures, blow-outs and broken wheels banished forever. The HOLLAND LIGHTNING DEMOUNTABLE WHEEL OUTFIT does it. Once installed, wheel changes can be made by merely loosening six nuts. Changes made in three minutes—no soiled hands or clothing, no matter how dirty tires may be. Simple installation—use the wooden wheels now on car and replace old bolts and nuts with our special equipment.

**The HOLLAND Lightning Demountable Wheel OUTFIT**

**For Fords and 490 Chevrolets**  
(Only Outfit That Makes Wheels on 490 Chevrolets Demountable)

Customers' price only \$4.00 East of the Rockies; \$4.50 West—for complete outfit. Liberal arrangements made with dealers who write quick. Dealers make profit on outfit, sell the spare wheel, extra casing, inner tube, tire carrier and cover at retail prices.

The Holland Demountable Wheel Outfit will attract and build big business for you. Money Back Guarantee—full instructions for installing and free wrench with each outfit.

**Send This Coupon NOW—Attached to Your Letter-head**

HOLLAND DEMOUNTABLE WHEEL CO.,  
Dept. 10, Holland, Mich.  
Please send me your liberal proposition on the Holland Lightning Demountable Wheel Outfit.

Name.....

Address.....



## MP PISTON RINGS

**For Every Car**

YOU need only one kind of piston-ring in stock—the M-P. One-piece; concentric; leak proof. Made of close-grained grey iron, accurate to one one-thousandth of an inch. Simple lock-joint never leaks compression.

**STOCK M-P PISTON - RINGS**

and watch your customers register satisfaction. Write today for dealer's terms.

Patent Pending

**THE METAL PRODUCTS CO., St. Louis, Mo.**

## MONOGRAM

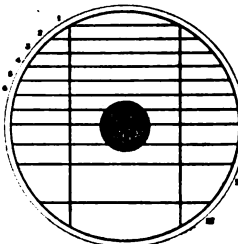
### OILS and GREASES

### QUALITY SERVICE

Used exclusively and recommended by more manufacturers of automobiles than any other oil on the market.

**THE MAKERS of MONOGRAM**  
**New York Lubricating Oil Company, New York**  
 BRANCHES IN PRINCIPAL CITIES

**Road Rays**  
**NOT**  
**"Sky" Rays**



**Direct Rays**  
**NOT**  
**"Glare" Rays**

### 74% MORE LIGHT ON THE ROAD

The New Osgood Lens (Cravath Long Distance Type) throws a waist-high beam of light one-third of a mile. Twelve shafts of light that stream as one. Write for interesting sales proposition.

OSGOOD LENS & SUPPLY CO., 2007 Michigan Ave., CHICAGO



**THE NEW**  
**OSGOOD LENS**  
 CRAVATH LONG DISTANCE TYPE

## MILEAGE GALORE

**Will Run 5,000 Miles and More**

These tires are of double thickness and have 12 plies of fabric; therefore no punctures, no blow-outs. They are rebuilt by our special process, vulcanized and double treaded.

30x3 ..\$4.50	32x3½..\$5.75	34x4....\$7.75
30x3½.. 5.50	33x4 .. 7.50	36x4.... 9.00

Other sizes in proportion. Write for prices today. Send \$1 deposit for each tire ordered, and we will send the tire, balance C. O. D., subject to your examination and approval before paying for same.

**CHICAGO DOUBLE TREAD CO.**  
 1235-39 South Wabash Avenue CHICAGO, ILL.

## TRUCKMOBILE

The growth of demand for the Truckmobile—far surpassing our most hopeful expectations—has been so great that the output of the Truckmobile has not only been doubled but redoubled. This and a Ford Chassis, old or new.

**\$350.00**

**Biggest of them all!**

**Commercial Truckmobile Co.**

E. F. KIRCHBERGER, PRESIDENT

1720 Michigan Ave. Dept. L-5 Chicago, Illinois

SINGLE ROW

DOUBLE ROW



THRUST

ROLLER

**REGROUND—NEW—EXCHANGED**  
**STEEL BALLS**

*Special Front Wheel Bearings for Fords*  
 Satisfaction Guaranteed

1919-1921 Michigan Avenue - CHICAGO

—ALSO—  
 Philadelphia Frankford, Pa. Boston New York

Announcing  
 the  
**"SEAL-TITE"**  
**PISTON RING**

Unquestionably the simplest, most accurate and efficient piston ring on the market. A One-Piece, High - Compression Ring. Dealers, get busy and secure the profitable agency for the Seal-Tite Ring which will assure "more" power, perfect compression and lubrication. Sample and Descriptive Literature upon request.

SEAL-TITE PISTON RING CO., Inc., 1704 E. Lake St., Minneapolis, Minn.



## DELION

### Long Service

## TIRES

Each Delion dealer gets *all* the Delion trade in a definitely-named territory. This holds good *permanently*. And he gets the profits he *should have* in tires. Investigate.

**DELION TIRE & RUBBER CO., Inc.**  
 Main Office: 1922 Broadway, New York  
 Chicago Office: 3449 Michigan Ave., Chicago

Tell your customers  
not to break their  
backs pumping tires.



## \$500 Jensen Tire Pump

Will produce 90 pounds pressure more easily than you can pump 65 pounds with the ordinary vertical pump, with one-quarter the effort and in half the time. Well made throughout.

Dealers' discounts on request

**The W. H. Howell Company**

10 State St., Geneva, Illinois



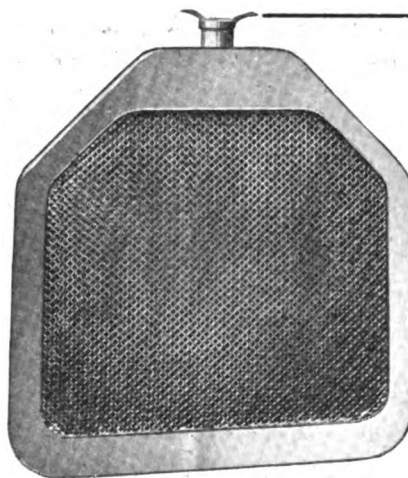
## PISTON RINGS

Put Energy In  
Your ENGINE

If your car eats up fuel and oil, lags on the level, crawls up hills and fails to live up to rated horse-power, blame it on poor piston rings.

K-P Rings are the remedy. All the joints are evenly distributed and blocked. The Tongue and Groove Side-lock, a K-P Patent, prevents scoring of cylinders, holds the ring in proper position and prevents carbon pockets. Send for free booklet, "Economy and Power".

K-P Rings are sold by all up-to-date dealers and jobbers.  
**KEYS PISTON RING CO.** 3008 Olive St., St. Louis, Mo.



## PIIONEER RADIATOR

Manufacturers

Rebuilding, Repairing  
and Manufacturing of Radiators  
for any make Car,  
Trucks, Tractors.

**Todd Mfg. Co.**  
Minneapolis, Minn.

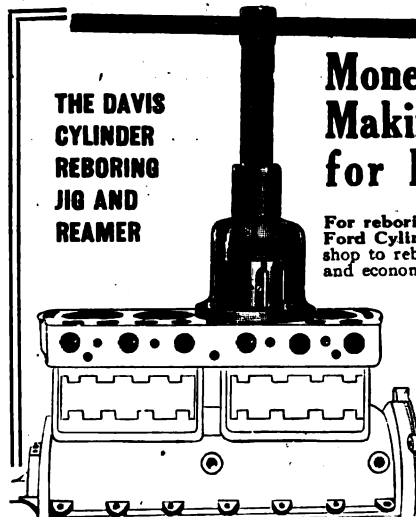
## The PERFECTION CYLINDER GRINDER

will regrind all sizes of motorcycle and automobile cylinders. This grinder will fit on any ordinary engine lathe.

Details on Request

**WOOD & SAFFORD MACHINE WORKS**  
Great Falls, Mont.

THE DAVIS  
CYLINDER  
REBORING  
JIG AND  
REAMER



## Money Making Machines for Every Shop

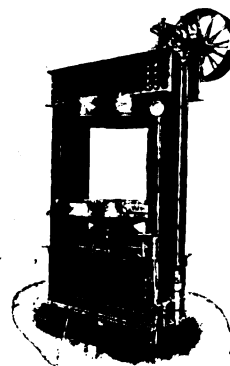
For reboring old worn and scored Ford Cylinders. Enables the small shop to re bore cylinders as efficiently and economically as the largest shops.

Makes the Ford Motor like new. Reboring Ford Cylinders is a profitable business in any section.

Also manufacturers of the Davis Milling Attachment and Air Compressor.

Write for Particulars.

**THE HINCKLEY MACHINEWORKS**  
HINCKLEY, ILL.



Tire Applying Press

## Hydraulic Arbor Presses

work easier  
than any  
others.

We make  
many sizes  
for many  
purposes.



WRITE FOR CATALOG

**Lourie Manufacturing Co.**  
SPRINGFIELD, ILL.

## UNITED FLEXIBLE METAL LINED GASOLINE AND AIR HOSE

Use UNITED Flexible Metal Lined GASOLINE HOSE and UNITED Flexible Metal Lined AIR HOSE and bring your station up to the ACME in EQUIPMENT. UNITED Flexible Metal Lined GASOLINE HOSE has been approved by The Board of Fire Underwriters. The largest Oil Companies, Garages and Filling Stations in the country are using our Gasoline Hose. We manufacture our hose in all sizes and attach couplings to fit any make of pump. Send us your requisitions and let us supply you with THE HOSE of the LONGEST SERVICE.

**UNITED METAL HOSE CO.**  
89 Chambers St. NEW YORK CITY

MORE Power  
Speed  
LESS Noise  
Gasoline  
Oil  
Carbon  
Trouble

If we regrind your cylinders and fit new pistons, we furnish our Oiltight Rings at no additional cost.

Write — West 2460  
or Phone

**GEO. H. BLETNER**  
216-218 S. Oakley Blvd. - - CHICAGO

# The Garage *and* Shop Market Place

## SCORED CYLINDERS

Repaired with  
**AMERICAN  
AMALGAMATED  
FILLER  
ALLOY**

**SCORED** automobile cylinders repaired with this wonderful new process are as dependable as a new cylinder. The scored surface of cylinder wall is left perfectly smooth and without the necessity of regrinding and fitting with new pistons. Due to our local heat method of application warping is entirely eliminated as preheating is unnecessary. The heat resisting filler alloy will withstand the extraordinary heat that the automobile cylinders are at times subject to, due to water supply becoming exhausted; or on the air cooled type of motor.

All work carefully and promptly done at a very low cost and guaranteed in every respect.

**Command  
Our  
Service**

**American Welding Co.**  
2724 Michigan Avenue  
CHICAGO, ILL.

## Automobile Cylinders

**REBORED AND GROUND**

PROMPT, EFFICIENT SERVICE.  
PRICES MODERATE.

**STERLING ENGINE CO.**  
329 S. Clinton St., Chicago

## SPECIALISTS

NOT  
Experimenters  
IN

## Cylinder Regrinding

**PISTONS**

Cast and Light Semi Cast

**RINGS and PINS**

Complete Records Kept  
Duplicate Parts Furnished

**BUTLER MFG. CO.**  
Est. 1897

Indianapolis, Ind.

## Cylinder Grinding

with new Pistons and Rings fitted  
\$8 each. Finest work and guaranteed  
in every particular.

**WE ALSO MANUFACTURE  
Cylinder Grinding Machines**

adapted to fit on any standard  
engine lathe and handle any automobile  
cylinders up to 6 cylinders  
cast together. Address

**SALTER MOTOR MFG. CO.**  
1516-18 Oakland Avenue Kansas City, Mo.

## CYLINDERS

**Rebored and Ground**

Fitted with Oversized Pistons and Rings

The Auto Machine Shop

**Schotthoefer Bros., Prop.**

211 So. Madison Ave. Peoria, Ill.

**ANDRE G. CATELAIN**

Everready Automatic Engine Starter. General  
machine work for foreign and American cars.  
Welding of all metals. Manufacturer Catelain  
Hose Coupling.  
1446-8 Indiana Ave. Chicago, Ill.

**\$5.00** Buys my formula for making  
body polish which agents and  
garagemen are clearing as high  
as \$150.00 per month on here.  
For particulars address  
B. SONNTAG, Waco, Tex.

**Send Us Your  
Orders for Parts  
We Save You 50%**

### OUR GUARANTEE

1. Quickest Possible SERVICE
2. Only Good Serviceable Parts
3. Satisfaction or Money Back

For Standard Makes & Orphan Cars  
Including Buick, Maxwell, Overland,  
Mitchell, Chalmers, Studebaker, Cadillac,  
Staver, Velie, Garford, Oakland,  
Regal, Glide, Perry, Moline, Auburn,  
Jackson, Krit-Moon, Reo, Dorris, Cole  
Everett, Paige, Jeffrey, Interstate, Hudson  
and others.

Special Bargains in Complete Engines,  
Radiators, Magnetos, Bearings, Carburetors,  
Auto Wheels, Springs, Rear  
Axles, Presto Tanks.

**New Piston Rings, 30c Each**  
Any Size or Over Size  
**Spark Plugs  $\frac{7}{8}$ —29c**

Correspondence Invited

**The  
Auto Parts Co.**

4116-18 Olive Street  
**ST. LOUIS, MO.**  
Branch: 325 W. Second Street  
**DAVENPORT, IOWA**

## Repairs

Parts for most any make car  
We save you 50 to 75%

## Engines

We carry large stock  
2, 4, 6 Cylinders

All Engines guaranteed in good shape

## Rear Axles

Semi, Three-quarter, Full Floating  
\$25.00 to \$50.00

Money refunded if goods are not  
satisfactory

Write us what you need

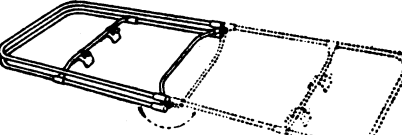
## Auto Wrecking Co.

We Tear 'Em Up and Sell the Pieces  
13th and OAK KANSAS CITY, MO.

## Electric Repairs

ON ALL STARTING, LIGHTING  
AND IGNITION APPARATUS—  
THE WAY YOU WANT IT DONE  
**ELECTRICAL TESTING CO.**  
PEORIA, ILL. BLOOMINGTON, ILL.

**SLEEP IN YOUR OWN CAR** The "ANYKAR" AUTO KOT rests on the backs of the front and back seats, lies perfectly level and affords perfect comfort. When not in use it folds to a compact size for carrying in the trunk. Two will fit in any 5 or 7 passenger car. Weighs less than 15 pounds. WRITE FOR FULL DESCRIPTION. Price, \$16.00.



Peoria Auto-Kot Co.  
PEORIA, ILL.

**PACO** The classiest racing body ever designed to fit a Ford chassis. It has that racy streamline effect that has made the French racers famous for their speed and beauty. Made of the best materials; ride without noise; easily mounted. Write for our new 3-color illustrated literature today.



PACO MANUFACTURING CO.  
GALESBURG, Dept. 11, ILLINOIS

**RIVES' AUTO-PEDAL PADS**  
NEVERSLIP  
Make Driving more comfortable and prevent feet from slipping.  
Full Set \$1.00  
ATTACHED TO ANY CAR IN A MINUTE.  
Close dealer co-operation insures quick sales. Write for proposition.  
Geo. H. Rives Mfg. Co. 2187 Woolworth Bldg., New York



**GARDEN CITY SPRING WORKS**  
Manufacturers of  
**AUTOMOBILE SPRINGS**  
2300 ARCHER AVE. CHICAGO, ILL.

## Garage and Shop Market Place (Continued)

**EARN \$50.00 WEEKLY**  
selling Collection Cabinets to Garages, Merchants, Manufacturers and Physicians. Your profit 100%. Cabinets sell for \$6.00, \$10.00, \$20.00, and up; exclusive territory. 80% of merchants doing a credit business will eventually buy. Write today and let us show you how to earn more money.

**Sayers Cabinet Mfg. Co.,**  
724-20 E. Jackson Blvd.,  
CHICAGO

## FOR SALE

a good 13-inch Screw Cutting Lathe. 6-foot bed; also shafting, chucks, etc. 3.1 H. P. gasoline engine and set of hand tools for garage-repairing, almost as good as new. Age causes me to quite auto repairing.

**M. N. WERTZ**  
Thomasville Georgia

**AAASCORED CYLINDERS**  
Repaired by Patented Electric process. Filled with a silver and nickel alloy. (Eliminates Grinding.) No warping or enlarging of cylinder bore. Same piston and rings used. Re-shipped 24 hours after received. Also do welding and grinding.

**L. LAWRENCE & CO.**  
1522 S. Michigan Ave. Chicago, Ill. 292 Halsey Street Newark, N. J.

**PROTECT YOUR IDEAS**  
Many of the best selling accessories and supplies were invented by garage and repair men. Protect the ideas you develop. A patent, a trade-mark or a copyright may mean the difference between affluence and poverty in later years.  
**CHARLES TURNER BROWN,**  
137 North Dearborn Street, Chicago, Ill.

**STARTING AND LIGHTING EQUIPMENT**  
Magnetos, Coils, Lighting, Generators, Starting Motors, Magnetizers. We manufacture, sell and repair. Prices right and service the best.

**H. B. WEBER & CO.,**  
1336 Michigan Avenue, Chicago, Ill.

## AUTO CAPE TOP CO.

Seat Covers. One-Man Top.

Victoria Tops. Painting.

Woodwork. : : : : :

Liberal Commission

to Garage Owners

Calumet 5600

2334-6-8 Michigan Ave.,

Chicago, Ill.

## SO-LUMINUM

"DON'T SCRAP ALUMINUM PARTS."

SAVE them with SO-LUMINUM, new, great welding compound; ¼ time and cost of acetylene. No flux—use gasoline torch.

Trial Bar With Full Directions, 50c.

Booklet 8

SO-LUMINUM MFG. CO., New York  
1700 Broadway

## AUTOMOBILE PARTS

Write for parts wanted and if we have them will quote you lowest prices.

We do welding and machine work of all metals.  
Marine engines and supplies.  
No catalogues.

## ABLE MACHINE WORKS

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Able Machine Works, 900 Washington Blvd., Chicago, Ill.  
Aske Automatic Voltage Regulator Co., Duluth, Minn.  
The M. W. Dunton Co., Providence, R. I. (Radiator Cure.)  
Service Motor Supply Co., 1523-31 Michigan Blvd., Chicago, Ill. (Complete Line.)  
Service Corporation, 1151 Frick Annex, Pittsburgh.  
Thurston Auto Supply Co., 3020 Michigan Ave., Chicago, Ill.  
United Specialties Co., Cincinnati, Ohio.  
I. Wolf Auto Parts & Tire Co., 619 N. Illinois St., Indianapolis, Ind.

## AIR TANKS

Wm. B. Scaife & Sons Co., Pittsburgh, Pa.

## AUTOMOBILES

Elgin Motor Car Corporation, Chicago.

## AUTOMOBILE AXLES

Russel Motor Axle Co. (Internal Gear Axle), North Detroit, Mich.

## AUTOMOBILE HEATERS

Thurston Auto Supply Mfg. Co., 3020 Michigan Ave., Chicago, Ill. (Brickley Auto Heater.)

## AUTOMOBILE HEEL RESTS

J. L. Lucas & Son, Bridgeport, Conn.

## AUTOMOBILE JACKS

Service Corporation, 1151 Frick Annex, Pittsburgh.

## AUTO TIRES

Amazon Rubber Co., Akron, Ohio.  
The B. F. Goodrich Co., Akron, Ohio.  
Dellon Tire & Rubber Co., Inc., 1922 Broadway, New York City.  
Chicago Double Tread Co., 1235 S. Wabash Ave., Chicago, Ill.  
Tolliver Tube & Tire Co., 736 14th St., Denver, Colo.  
Star Rubber Co., Akron, O.

## AUTOMOBILE TOP HOLDER

Rock Island Mfg. Co., Rock Island, Ill. (Adams Auto Top Holder.)

## AUTO LOCKS

Angesten Koch Co., 4064 Princeton Ave., Chicago.  
Perry Auto Lock Co., 1238 Michigan Ave., Chicago.

## AUTO TOPS

Buob & Scheu, 216-220 Webster St., Cincinnati, O.  
Auto Cape Top Co., 2338 Michigan Ave., Chicago.

## AUTOMOBILE TOURING COTS

Peoria Auto-Kot Co., Peoria, Ill.

## BALING PRESSES

Chicago Baling Press Co., Chicago, Ill.

## BALL AND ROLLER BEARINGS

The Norma Company of America, 1790 Broadway, New York City.  
Prun Ball Bearing Works, 1919 Michigan Ave., Chicago.

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American Battery Co., 1120 Fulton St., Chicago.  
The Cleveland Battery & Electric Co., Cleveland, Ohio.  
Detroit Battery Co., Detroit, Mich.  
Permalite Corporation, Indianapolis. (Storage Batteries.)  
Edison Storage Battery Co., Orange, N. J.

## BATTERY CHARGING OUTFITS

Ellington Electric Co., Quincy, Ill.

## BODIES

Paco Mfg. Co. ("Fasco" racing bodies for Ford cars), Peoria, Ill.  
Millsbaugh & Irish (Ford Coupes or Ford Sedans), 212 W. McCarty St., Indianapolis, Ind.

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American Brass Foundry Co., Milwaukee, Wis.

## CABINETS

American Bolt & Screw Case Co., Dayton, Ohio.

## CALCULAGRAPHS

Calculagraph Co., 1477 Jewelers Bldg., New York City.

## CARRON REMOVERS

Adams & Elting Co., 716-26 Washington Blvd., Chicago.  
Auto Supply & Mfg. Co., 210 Fourth Ave., Pittsburgh, Pa.

## CARBURETORS

Marvel Carburetor Co., Flint, Mich.

## CASH REGISTERS

National Cash Register Co., Dayton, O.

## COLLECTION SYSTEMS

Sayers Cabinet Mfg. Co., 20 E. Jackson Blvd., Chicago.

## COMMERCIAL VEHICLE

Chicago Pneumatic Tool Co., 343 S. Dearborn St., Chicago, Ill. (Little Giant.)  
Dearborn Motor Truck Co., Chicago, Ill.  
Commercial Truckmobile Co., 1606 Michigan Blvd., Chicago, Ill.  
Detroit Truck Co., Detroit, Mich.  
Smith Form-a-Truck Co., 1470 Michigan Ave., Chicago, Ill.

## COVERS

Auto Cape Top Co., 2334 Michigan Ave., Chicago.  
Kennedy Car Liner & Bag Co., Shelbyville, Ind.

## CREEPERS

Gray-Heath Co., 1440 Michigan Ave., Chicago.

## CYLINDER REBORING

Allen & Curtis Co., Mishawaka, Ind.  
Butler Mfg. Co., Indianapolis, Ind.  
Geo. H. Blettner, 216 S. Oakley Blvd., Chicago.  
Wall Machine & Mfg. Co., 4513 Lincoln Ave., Chicago.  
Hercules Welding & Machine Co., 223 N. 16th St., Philadelphia, Pa.  
Marvel Machinery Co., Boston Block, Minneapolis, Minn.  
Sterling Engine Co., 331 S. Clinton Ave., Chicago.  
Universal Tool Co., 632 Dime Bank Bldg., Detroit.

## CYLINDER REBORING MACHINES

The Hincley Machine Works, Hincley, Ill.  
Marvel Machinery Co., Minneapolis, Minn.  
Wood & Safford Machine Works, Great Falls, Mont.

## DEMOUNTABLE WHEELS

Holland Demountable Wheel Co., Holland, Mich.

## ELECTRIC STARTING SYSTEMS

Disco Electric Starter Corp., Detroit, Mich.

## ENGINES

Auto Engine Wks., St. Paul.

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Willard Company, South Bend, Ind.

## GARAGE BOOKKEEPING SYSTEMS

Accurate System & Manifold Co., 22 Beekman St., New York.  
Thomas J. Harton & Co., Inc., 212 Church St., New York.

## GASOLINE STORAGE AND PUMPING SYSTEMS

The American Oil Pump & Tank Co., Cincinnati, Ohio.  
Wm. B. Scaife & Sons Co., Pittsburgh, Pa.

## GASOLINE TANKS

The American Oil Pump & Tank Co., Cincinnati, Ohio.

## GASOLINE TESTERS

M. A. Levy Co., Chicago.

## GEARS

William Ganschow Co., 1002 W. Washington St., Chicago.

## HEATERS

Willard Company, South Bend, Ind.  
Garford Mfg. Co., Elyria, Ohio.

## HOSE—TUBING

United Metal Hose Co., New York, N. Y.

## HYDRAULIC PRESSES

Louise Mfg. Co., Springfield, Ill.

## IGNITION

Imperial Brass Mfg. Co., 529 S. Racine Ave., Chicago, Ill. (Imperial Primer.)

## LATHES

Marvel Machinery Co., Boston Block, Minneapolis, Minn.

## LENSES

Osgood Lens & Supply Co., 1241 Milwaukee Ave., Chicago.

## LIGHTING SYSTEMS

General Gas-Electric Co., Hanover, Pa.

## LUBRICANTS AND OILS

New York Lubricating Oil Co., New York City.  
Standard Oil Co. (Indiana), Chicago, Ill.

## MAGNETOS

I. Wolf Auto Parts & Tire Co. (Boach), 619 N. Illinois St., Indianapolis, Ind. (Used Bosch Magnets.)

## NUT LOCKS

Spring Nut Lock Co., 643 Transportation Bldg., Chicago.

## OFFICE EQUIPMENT

Stevens & Co., 375 Broadway, New York City.

## PAPER PRESSES

Chicago Baling Press Co., 305 S. La Salle St., Chicago.

## PEDAL PADS

Geo. H. Rives Mfg. Co., Woolworth Bldg., New York City.

## PISTON RINGS

Detroit Piston Ring Co., Detroit, Mich.  
20 E. Jackson Blvd., Chicago.  
Ever-Tight Piston Ring Co., 1431 Chestnut St., St. Louis.  
Keys Piston Ring Co., 3008 Olive St., St. Louis.  
The Metal Products Co., St. Louis, Mo.  
Butler Mfg. Co., Indianapolis, Ind.  
Inland Machine Works, 817 Mount St., St. Louis.  
Pondelick Bros., Leavitt St. and Jackson Blvd., Chicago.

## PUMPS

Detroit Accessories Corporation, Detroit, Mich.  
The W. H. Howell Co., 10 State St., Geneva, Ill. (Jensen Tire Pump.)  
Danvers Specialty Co., Danvers, Ill.

## RADIATORS

Todd Mfg. Co., Minneapolis.

## SEARCHLIGHTS

Aske Automatic Voltage Regulator Co., Duluth, Minn.

## SHIMS

Laminated Shim Co., 531 Canal St., New York

## SHOCK ABSORBERS

Auto Device Sales Co., Plymouth, Ind.  
Phillip H. Webber & Co., Hoopeston, Ill. (W. & C.)  
Hanard Sales Co., 86 Michigan St., Milwaukee.

## SIGNS

Commonwealth Edison Co., 72 W. Adams St., Chicago, Ill. (Federal Electric Signs.)  
Dawes Electric Sign Mfg. Co., Pittsburgh, Pa.

## SOLDERING FLUX

M. W. Dunton Company, Providence, R. I.

## SPARK PLUGS

Benford Mfg. Co., Mt. Vernon, N. Y.  
Twin Fire Spark Plug Co., 638 Woodward Ave., Detroit.

## SPARK PLUG TESTER

M. A. Levy Company, Chicago.

## SPOTLIGHTS

Aske Automatic Voltage Regulator Co., Duluth, Minn.

## SPRINGS

Garden City Spring Works, 2300 Archer Ave., Chicago.  
Higgins Spring & Axle Co., Racine, Wis.  
The Edward F. Lyon Co., Woodward Ave. and Antoinette St., Detroit, Mich. (Self-Lubricating.)  
Jenkins Vulcan Spring Co., 1402 Chestnut St., St. Louis.  
Triple Action Spring Co., 65 E. 28th St., Chicago.  
Tuthill Spring Co., 760 Polk St., Chicago (Tuthill Lubricated Titantic Springs).

## STARTING SYSTEMS

Disco Electric Starter Corporation, Detroit, Mich.  
H. B. Weber & Co., 1336 Michigan Ave., Chicago.

## STORAGE OUTFITS

American Oil Pump & Tank Co., Cincinnati, Ohio.  
Wm. B. Scaife & Sons Co., Pittsburgh, Pa.  
Shotwell Pump & Tank Co., Indianapolis, Ind.

## TESTING INSTRUMENTS

A. D. Perkins, 1777 Broadway, New York City.  
Weston Electrical Instrument Company, Newark, N. J.

## TIME STAMPS

Beird Equipment Co., 324 W. Ohio St., Chicago.  
Calculagraph Co., New York.  
A. D. Joslin Mfg. Co., 225 W. Erie St., Chicago.

## TIRE REPAIR EQUIPMENT

Haywood Tire & Equipment Co., 650 Capitol Ave., Indianapolis.

## TIRE PUMPS

Imperial Brass Mfg. Co., 529 S. Racine Ave., Chicago (Wixom Hand Tire Pumps).

## TRACTORS

Parrett Tractor Co., 429 Fisher Bldg., Chicago.

## TRUCK UNITS

Commercial Truckmobile Co., 1606 Michigan Blvd., Chicago.  
Smith Form-a-Truck Co., 1470 Michigan Blvd., Chicago.

Detroit Truck Co., Detroit, Mich.

## TRUCK CHAINS

Service Corporation, 1151 Frick Annex, Pittsburgh.

## TRUNKS

Kamlee Co., 440 E. Water St., Milwaukee, Wis.

## TYPEWRITERS

All Makes Typewriter Exchange, 162 N. Dearborn St., Chicago.

## VALVES

A. Schrader's Son, Inc., 783-793 Atlantic Ave., Brooklyn, N. Y. (Automatic Inflating Valve).  
Romort Mfg. Co., Seattle, Wash.

## VARNISHES

Valentine & Company, New York, Chicago, Boston.

## VULCANIZERS

Tire Repair Equipment Co., Appleton, Wis.  
Vanderpool Vulcanizing Co., Springfield, Ohio.

## WELDING APPARATUS

American Welding Co., 2724 Michigan Ave., Chicago.  
Hercules Welding & Machine Co., 223 N. 16th St., Philadelphia, Pa. (Acetylene Welding and Cutting Apparatus).  
So-Luminum Mfg. Co., 1790 Broadway, New York City.

## WRECKING TRUCKS

Robt. Holmes & Bro., Danville, Ill.

## WRENCHES

The Graham Roller Bearing Co., Coudersport, Pa. ("Curko" Socket Wrenches).

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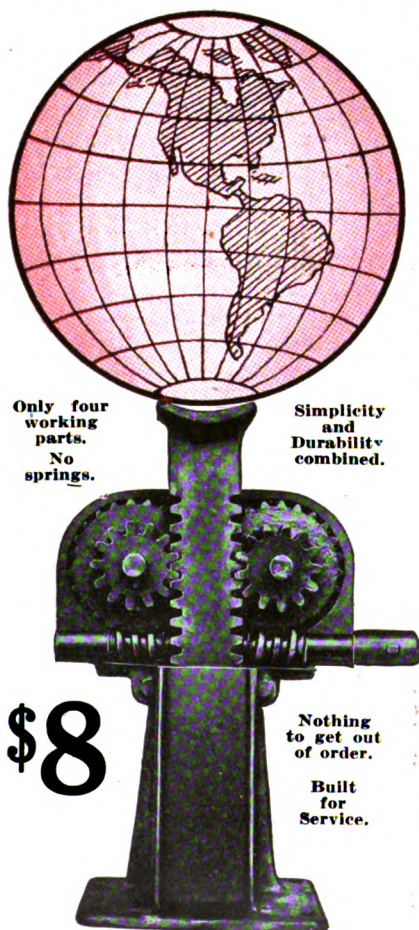
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